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The Citrus Industry

THE ONLY PUBLICATION IN THE WORLD
DEVOTED EXCLUSIVELY TO CITRUS FRUITS

Issued Monthly
Representative of every interest—
Representing no special interest.

VOL. 4, NO. 2

TAMPA, FLA., FEBRUARY, 1923

15 C. A COPY

Uniformly



The Best

AN UNEQUALLED DISTRIBUTION

While gratifying to the organization, and to the growers it serves, the success of the American Fruit Growers Inc., in obtaining top-of-the-market prices should not be emphasized unduly.

In those markets where prices are definitely recorded and printed, the higher average prices daily paid for Florida citrus fruits sold by the A. F. G. are clearly established.

Those who wish comparisons may tabulate the results—not comparing A. F. G. prices with those for all other fruit, which must include much that is inferior; but with those obtained for fruit from any other single source. The results of such comparisons are significant.

However, distribution is to be considered even above the matter of prices. Distribution is the all-important thing in marketing Florida's citrus crops; and in point of widespread and effective distribution A. F. G. service must be acknowledged supreme.

AMERICAN FRUIT GROWERS INC.

ORLANDO, FLORIDA

Dependable



Quality

SUB-TROPICAL MID-WINTER FAIR NUMBER

An Invitation

To see some of the finest Orange and Grapefruit Groves in America and the Scenic Highlands of Florida.

You will never regret a trip to Lake Wales, in Polk County. Citrus Groves from just in the making to some of the most productive properties in Florida are here.

Mammoth Grove

Florida's Gigantic Citrus Development may be seen by writing our Lake Wales offices.

Mammoth Grove is a development comprising over 5,000 acres to be planted entirely to citrus trees.

Representative people from all parts of the United States are grove owners in Mammoth Grove.

Many of these people knew nothing about citrus culture, but after satisfying themselves as to the high grade citrus soil and conditions here, and familiarizing themselves with the personnel of our organization, they have purchased groves and are advising their friends to do likewise.

PERPETUAL CO-OPERATIVE CARE

Is a big feature for the man who wants to own a grove, but does not intend to devote his time to its supervision. Our corps of expert horticulturists and citrus men will care for your grove as long as you desire. Think what this means to the man who wants an income from Florida.

Instead of leaving money here, you take it.

A nominal payment makes you a grove owner.

LET US EXPLAIN OUR PLAN

The Florida Highlands Citrus Corporation

Lake Wales

Polk County

Florida

NOW BEING OFFERED

Stock in the

Florida Mortgage, Title & Bonding Company

TAMPA, FLORIDA

Incorporated Under the Laws of Florida

MILLIONS OF NEW MONEY FOR FLORIDA

CAPITALIZATION, \$2,500,000.00

Officers and Directors.

CHARLES H. BROWN, Tampa, Florida, president
Florida Mortgage, Title & Bonding Company.

FRANK F. PULVER, St. Petersburg, Florida, First
Vice-President Florida Mortgage, Title & Bonding
Company.

FRANK B. SHUTTS, Miami, Florida, Second Vice-
President Florida Mortgage, Title & Bonding Co.

JOHN H. PERRY, New York and Florida, Director
Florida Mortgage, Title & Bonding Co.

ALFRED H. WAGG, West Palm Beach, Florida, Di-
rector Florida Mortgage, Title & Bonding Co.

N. A. Perry, Tampa, Florida, Secretary and Treas-
urer Florida Mortgage, Title & Bonding Co.

General Counsel,

SHUTTS & BOWEN,
Miami, Fla.

Temporary Offices, Second Floor, Giddens Building,
Tampa, Fla.

**Profits of Similar
Institutions**

BOND AND MORTGAGE GUAR-
ANTEE TRUST CO. OF N. Y.

This Corporation has returned to
the original investor on each \$1,000
invested \$6,229 in cash dividends;
\$4,000 in stock dividends and a sur-
plus and undivided profits to the cred-
it of each \$1,000 originally invested of
\$4,448.00, giving a total profit of \$14,-
667.00, an earning of over 69% annu-
ally on original \$1,000 invested.

LAWYERS MORTGAGE COMPANY

This Corporation over a period of
six years earned 115% annually on its
original capitalization. Since the or-
ganization of this Corporation each
stockholder has received for each \$1,-

000 original investment twelve times
his original holdings in stock divi-
dends or \$12,000, and in addition has
received in cash dividends more than
three times his original investment
or \$3,055, making a total of \$15,055 re-
turns on investment of \$1,000.

greatest opportunities in this respect.
Florida is just commencing to de-
velop. Her possibilities during the
next twenty-five years stagger the
imagination. Geographically she is
ideally situated to be the seat of the
greatest realty development the Unit-
ed States has ever known.

Safety

First Mortgages on improved, in-
come producing Real Estate are the
safest form of investment in the
world.

Individual investors have fallen in
line with the more experienced and
cautious institutions, and are today
consistent buyers of First Mortgage
Real Estate Bonds.

There is no investment sounder
than bonds on real estate.

The Florida Mortgage, Title &
Bonding Co. will engage in the safest
business in the world in the one
state in this Union which offers the

**Business of
Company**

The Florida Mortgage, Title &
Bonding Company of Florida is or-
ganized with an authorized capital
of \$2,500,000, primarily for the pur-
pose of buying and selling approved
First and Second Mortgages, Gov-
ernment, State, County, Municipal,
School and Public Improvement
Bonds, finance building construction,
to discount Commercial paper, Trade
Acceptances, Guaranty of Title, Con-
struction Loans, etc.

WONDERFUL OPPORTUNITY

Florida is the only State in the Union that has not created from five to one hundred companies of this character to en-
courage the upbuilding of the State in the way of providing money to the large office building builders, the home builders,
the farmer, the fruit grower, the rancher and the general public who are anxious to develop the State and their respective
communities with money obtained at a reasonable rate of interest. And the tremendous profits derived from this man-
ner of financing goes into the pockets of the people of the State who own and control them.

There is not a company of sufficient magnitude in the State to handle the business heretofore outlined. If the future
progress of Florida as a sovereign State is to be well taken care of, then the financial and moral support of its citizens
should be as a unit in helping create an institution such as the

Florida Mortgage, Title & Bonding Company

Second Floor Giddens Bldg., Tampa, Fla.

Letters of a Florida Citrus Grower to His Nephew

VI.

From Jonas Arland at Hammock Groves, Florida, to Samuel Newcomer, Bentonville, Mich.

Dear Sam:

Don't let anybody tell you that you don't want to pool your fruit. On that subject Dr. J. H. Ross says:

"Pooling as practiced in the most successful associations of the Florida Citrus Exchange is in reality a most practicable form of business insurance. In marketing any perishable commodity it is inevitable that mishaps shall befall occasional cars. Pooling so distributes any bad effects from unfortunate cars that the divided loss is almost negligible, and, further, by distributing exceptionally high returns upon exceptionally fortunate cars the result is to stabilize citrus growing and put it upon a sound business basis. Yet each grower participates in the distribution of returns for fruit of the same quality as he shipped. Pooling is the Golden Rule applied to business. It is 'good business,' plus."

As I see it, a fellow pools his fruit, whether he goes into a pool or not. If he plays a lone hand, he has got to pool with himself. That means fat years and lean years; and the lean years can be depended upon to come at the wrong time. A man doesn't pool good fruit and get returns proportional to those of another who ships poor fruit. What he does get is his share of the returns on fruit of precisely the same grade and sizes. Wherever pooling is practiced the growers are happy and are contented with their returns. Generally speaking, the longer the term of the pool operated, the happier the growers are. I, for one, would not consider having my fruit sold by any organization not in a position to give me the advantage of pooling. Anyone who refuses to enter into a pool is not properly informed on the subject, else is like some of those individualists who refuse to divide responsibility with their fellows by carrying insurance on their homes. Yet when one of that sort gets burned out without insurance he generally makes such a walling and gnashing of teeth it is hard to hear the clink of the silver falling into the hat that well-meaning neighbors are passing about to buy a new outfit of clothes for his family. The arguments that some put up against pooling somehow sound to me like the plea of the fellow who was being tried for the murder of his father and mother, and asked the mercy of the court on the ground that he was an orphan.

I shipped two cars of watermelons last spring on my own hook. One of them got caught in a washout on a railroad near Macon. That being what the railroads call an "Act of Providence," I had no chance to pass the buck. The other one arrived in Philadelphia at a time when every cuss in Florida who had watermelons thought best to ship them into Philadelphia. There were so many on the sidings it gave the dealers colic just to look them over. Mine brought thirty-nine dollars and eighteen cents less than freight and icing. I have made money on watermelons before, and I will make it again, but it is darned unhandy to slip up and get a little less than nothing out of these. How much better it would have been if all of us here had handled our melons together. In that case it might just have been that my two cars would have hit the high spots, but I wouldn't have begrudged some of those who were out of luck getting part of my money in that case. For you can't beat the law of averages, and no really thinking man tries to. There must always be some who figure they will have no hard luck; and they, of course, will try to beat the game. For that matter, however, there are folks who figure they know enough to run the earth, though they're hardly able to put a tire on a flivver. These angles of marketing your citrus deserve looking into pretty

thoroughly. There is many a stream which will make a horse swim to cross it that only takes ducks up to their middle.

I will mail this as I go through town. Bill Heard, another seventy-year youngster, has just showed up with information that the perch are biting hard down in the big lake; and I reckon we'll have to go down there and try to accommodate them. Love to Etta and the kids and yourself, from
Your Uncle, Jonas.

VII.

From Jonas Arland at Hammock Groves, Florida, to Samuel Newcomer, Bentonville, Mich.

Dear Sam:

Somewhere in the Good Book it says, "Blessed are the meek, for they shall inherit the earth."

From which I gather that whatever of this world's goods I accumulate will be by my own efforts, as my chances of inheritance are small. Goodness knows, I have borne this Biblical injunction in mind, but every now and then something knocks it plumb out of my head. Have just come back from town, after staging an exhibition, and remorse has me hard and fast, even if I did have considerable provocation.

I stopped in to buy a week's rations, and ran into a fruit buyer and a bunch of my neighbors. Couldn't help hearing the conversations; and I will say this fellow had a pretty poisonous line of talk. He was willing to admit his concern was the one straight and honest benefactor of the growers. All the others were either crooked or under the management of congenial idiots. When he turned his flow of talk on the Florida Citrus Exchange, I got into the game just to avoid being gassed as a non-combatant.

The things he said didn't amount to much. In fact, they would have been laughable if my sense of humor had been working; but it had quit on me. One thing that helped make me mad was that in the crowd were three members of our association who were taking it all in, and who either didn't have enough information or enough backbone to stand up for their own organization.

After he had set out his claims as to the impossibility of a bunch of farmers managing their own affairs, and had begun to pay his compliments more definitely, I forgot all about my chances for inheriting anything and ripped into him. Told him first that I didn't have to beg his pardon for butting in, for when he was talking about the Florida Citrus Exchange he was talking about me; that I wasn't an officer; but I was one of the owners, and I resented his effort to backbite and belittle it. I bullied the bunch into going over to the packing house and established by actual figures that over a term of years I had averaged far more for my fruit through the Florida Citrus Exchange than any of the crowd had who had sold to speculators. In fact when I began to tear into this fellow it didn't take me long to have him in a corner admitting that largely his talk had been pure bluff, and he didn't have the facts to back it up. Then I certainly did lay him open.

However, when one of my neighbors mentioned that his own average through the Florida Citrus Exchange had beat mine a little, he began to get the benefits. Why, he had stood still with not a word to say, not only letting everybody in hearing believe this fellow, but indicating that he believed this talk himself. I told my friend that if he didn't think enough of the Florida Citrus Exchange to protect its good name on such occasions, he wasn't deserving of the benefits that came to him through it. Believe on the spur of the moment I mentioned "yellow legs," and said a good deal that I will have to eat in order to re-establish friendly relations. However, it does make me tired when I find some persons willing to let this propaganda go by when they have it in their power to scotch it offhand. It makes me sore all through when I hear some of our own growers, who are helping to direct the affairs of the organization run down by such loose talk, when I know their services are given at a sacrifice to themselves in most instances; and I know they are being thus abused simply because their work helps make the organization effective and thus earns the enmity of some of these speculators.

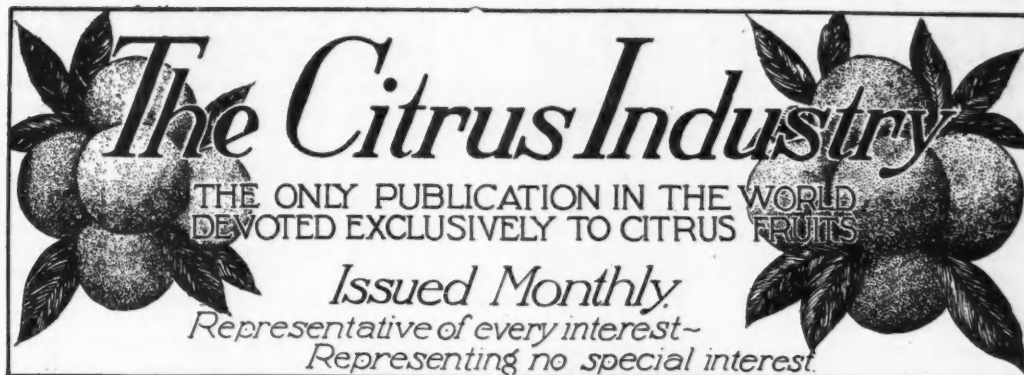
I believe that whoever stands by you is worth standing by in turn; and as long as I profit through my part ownership in the Florida Citrus Exchange, guess I will be willing to accept my part of the responsibility in protecting it, meekness to the contrary notwithstanding.

And if I run true to form now and then, forgetting all about being meek, I am fairly consistent at that. And wasn't it Bill Nye who said, "Consistency, thou art a mule?"

With best love to Etta, the youngsters and yourself,
Your Cantankerous,
Uncle Jonas.

These letters constitute the fourth installment of a series. Others will be published in early issues.

—Advertisement.



Vol. 4

TAMPA, FLORIDA FEBRUARY, 1923

No. 2

Sub-Tropical Mid-Winter Fair, Orlando, Feb. 13-17

What is there about a fair, this particular Sub-Tropical Mid-Winter Fair, that distinguishes it one year from any previous year of its history? All fairs must be much alike in most particulars because each is an annual reproduction and therefore a repetition of its predecessor. But even though this be so, there can be variety in exploiting and exhibiting these same features of a fair, dependent upon the ingenuity and the artistic temperament of the builders.

The reason that "All fairs are alike" is because very few persons possess the happy faculty of taking the crude products of Nature's garden and so arranging them from time to time that they almost seem to be different in their nature.

Perhaps not enough credit is given in premium books for this artistic arrangement, and quite likely the judges in aiming to be particularly exact in crediting the value of the product have almost entirely overlooked the placing of this product to the best advantage.

And to this, no doubt, may be attributed the dissatisfaction which sometimes follows on the part of the

exhibition and if there is to be that variety which is calculated to attract the attention and hold the admiration of those who pay their way into the gates, this very quality of display and arrangement must receive more attention and greater credit.

The Sub-Tropical Mid-Winter Fair has been very fortunate in respect to the artistic set-up of its exhibits and the manner in which they appeal to the spectator and in this particular the present fair will surpass most other efforts.

The reproduction of a Seminole county celery farm, with the sub-soil irrigation in full view and operation showing the stuff actually growing and stacks and stacks of the finished product of celery, lettuce, cabbage and other vegetables, is an educational object lesson.

This is but an illustration of the manner in which a product may be shown to the best advantage. And so with many other features of this splendid show.

Exceptional Race Program

Very few fairs anywhere can have the best class of races as this fair, because our climate and the best

track in the South for this purpose brings to Orlando nearly a hundred of the most famous race horses of the country.

And, since the automobile has superseded the horse in nearly every sphere, there is left only this high-class try-out of skill, rapidity of locomotion and endurance of this most noble of all animals.

Thus the Sub-Tropical Mid-Winter Fair has the very best races possible to assemble on a race track, and this is one of the greatest attractions to all those who have not sold themselves to oil and gas and a steering wheel, which after all cannot replace a living, breathing, moving intelligent horse of the highest quality.

And, these two mentioned features of "difference" in the Sub-Tropical Mid-Winter Fair are illustrations of several in other departments.

Amusement Features

The amusement and mid-way features at the fair this year will be provided by the Johnny J. Jones Shows and Carnival Attractions. Johnny J. Jones, a resident of Orlando, has undoubtedly the cleanest and best attractions of this nature shown any-



where in the country. Wherever shows are given the name of Johnny J. Jones is a synonym of all that is best. Those who saw these attractions at Tampa during the South Florida Fair unite in pronouncing this feature even better than any which even Johnny Jones has presented heretofore.

History of Sub-Tropical Mid-Winter Fair

The Sub-Tropical Mid-Winter Fair originated in the year 1910 as The Orange County Fair Association, growing out of the Orlando Driving Park Association, which owned the forty-acre tract, located in almost the center of the city of Orlando, where the Annual Fair is held.

The Driving Park Association being for some years contributors to the sports of Orange county, decided that

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Brothers, W. M. Davis, C. E. Howard, the late W. C. Temple and the late W. L. Palmer.

James L. Giles has been treasurer of the Association since its organization; and the presidency has rotated among W. R. O'Neal, H. H. Dickson, and Seth Woodruff, Mr. O'Neal being the present president.

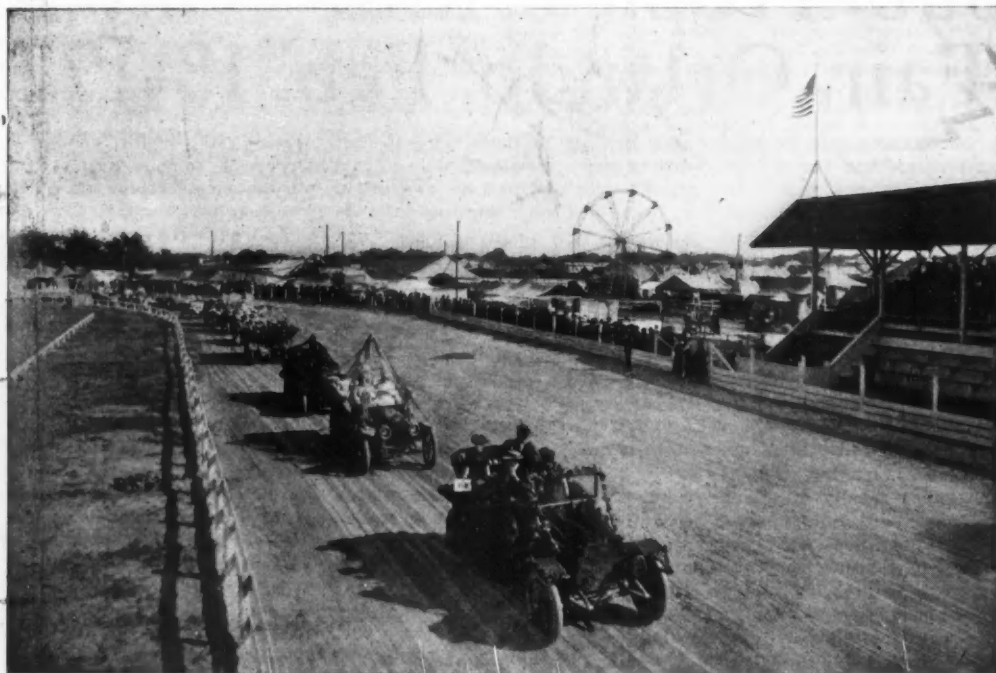
The Secretary and Manager shifted between W. R. O'Neal, Seth Woodruff and C. E. Howard, the latter having held the office for the past five years.

The Sub-Tropical Mid-Winter Fair is unique among Florida expositions, being neither a county fair, a state fair nor a distinct sectional fair, but rather embracing a community of counties and localities brought together to encourage horticulture, agriculture, manufactures, home economics art, stock and poultry industries, be-

better hog and cattle upbuilding and in very much increased interest in poultry raising.

Besides, since "Through the eye man improves," more than through any other faculty, the educational feature of this fair has been of incalculable value to the rising generation, such as perhaps cannot with equal value be secured any other way.

And then, the bringing together of all these products of brain and hand, of soil, sun and rain, and the results of Nature's best selection in the domestic animal creation, so that all men may see for themselves the absolute results of the excellencies of our marvelous Florida advantages, without doubt has contributed more than any other one thing to the most wonderful growth of the counties and the towns taking part in the enter-



an enlargement of their enterprise in the interest of the county would result in the upbuilding of this section, agreed to contribute as a share toward this end, the valuable tract of land held by them.

The gentlemen forming this original Association were Jas. L. Giles, David Lockhart, Seth Woodruff, W. H. Reynolds, H. L. Beeman and others who, very naturally, became the chief stockholders in the Fair Association which followed.

Among those who became interested in the formation of the Fair Association were W. R. O'Neal, M. O. Overstreet, H. H. Dickson, Walker

sides educational, publicity and annual entertaining features; all of these contributing to the development and improvement of the particular sections interested.

It is self-evident that the conception of this fair and the expenditure of the energies of the men who have all these years given to it their best thought and labor has not been "love's labor lost," for to it may certainly be attributed much of improvement in the production of our citrus fruits, crops of field and garden, increased energies in the various lines of art, woman's craft and household productions, and certainly in the lines of

prise.

And while Orlando has freely furnished the place, and Orlando men have been the chief promoters and contributors to these annual fairs, much must be handed to all those who have so generously assisted in "telling the world" the good news, and Orlando rejoices in all the benefits which have accrued to every section by reason of their co-operation.

The world owes a living only to those who go out and get it; in other words, luck is on the side of the man who practices the best business methods.

Orange County in the Heart of Florida

By Karl Lehmann, Secretary Orange County Chamber of Commerce

Orange County is in the heart of Florida in every sense of the word, and that means much to this great section of this great state.

Orange County is in the exact geographical center of Florida midway between the Atlantic ocean and the Gulf of Mexico giving it a mild, delightful climate with refreshing breezes blowing off of its 1,500 fresh water lakes on the warmest day in midsummer and in the winter these bodies of water, including Lake Apopka, 31 miles long, afford an excellent frost protection for grove and garden.

Orange County is the largest shipping center for citrus fruits in Florida, all but one of the great fruit mar-

20,000 acres of groves and nearly 3,000 additional are being set this year. This county is rapidly forging into first place among the citrus producing counties of Florida.

Orange County is a great producing section for melons and vegetables. Some 400 acres of melons in west Orange and 745 acres of cabbage, 836 acres of tomatoes, 150 acres of beans, 787 acres of lettuce and 1,875 acres of cucumbers, tell something of this county as a vegetable growing center. During the cucumber shipping season an average of 45 cars a day move out from the section about Winter Garden and at the height of the season, Winter Garden, Ocoee, Tilden-

\$10 a box fruit." The largest producers of bananas in Florida are in the Pine Castle section of the county.

Orange County excels in the production of thoroughbred, prize winning poultry. This year stock shipped from within the bounds of Orange County has won the highest honors, taking all first premiums in their class at the following poultry shows: Berryville, Va; Petersburg, Va; Norfolk, Va; Woodstock, Va; Roanoke, Va; Richmond, Va; Marion, Va; and at the 1922 Florida State Fair at Jacksonville. S. D. Hardaway, of Orange County, had two sweepstake birds in the show and was awarded honors for the best cock and best bird, and also



A Dairy Herd, Orange County, Florida

keting agencies having their headquarters in this county. Last season 735,000 boxes of orange, grapefruit and tangerines raised in Orange County were packed and shipped from our packing houses bringing more than \$2,000,000.00 into this county for that crop alone and in addition to that nearly 1,000,000 boxes of citrus fruits raised in other counties were packed and shipped in Orange County packing houses because of the excellent facilities of these houses. Nearly one-seventh of the entire crop of citrus fruit shipped out of Florida was packed and shipped from Orange County. Orange County has nearly

ville and Oakland ship an average of 56 cars a day or enough to make two solid trainloads of 28 cars each loaded with cucumbers which bring a fancy price in the waiting markets. The cucumber crop alone brings more than a million dollars a year into Orange County. The lettuce and tomatoes from this section always bring a premium in every market in the country because of the superior product and packing for which Orange County is famous.

Orange County is the home of the original Temple orange tree, which has furnished the bud wood for the Temple orange trees of Florida, "the

the best pullet in the show. Birds from Orange County shown at the Coliseum Show, Chicago, won first prize with nine other states competing.

Orange County is the center of the good roads system of Florida, with 663 miles of improved roads built and building, a \$3,000,000 bond issue for good roads carried with a large majority. These roads are now being built, connecting every part of the state with every other section, bringing the county within a two hours' drive over excellent roads to the finest ocean beaches in the country.

Orange County has fine towns,

Eight

churches and schools and this year has built nearly \$350,000 worth of new school houses and improved many others. No county excels Orange in the educational opportunities it offers, running from excellent elementary schools up to Rollins College, at Winter Park, Florida's oldest institution of higher learning.

Orange County has a half million acres that can be bought at from \$50 to \$100 an acre, land that is fine for raising oranges and grapefruit, gardens and trucking. Improved farms and groves can be had at prices varying from \$1,000 to \$3,000 an acre and highly developed property brings higher prices.

Orange County offers many attractions to the tourist as well as the settler. Fine fishing in hundreds of clear, sparkling lakes, boating, swimming and golf every month of the year. Amusements of the finest sort abound, the best music of the country is heard during the year at Orlando and other centers of the county.

Orange County has a live wide-awake Chamber of Commerce, supported by public taxation which helps to attract people to this splendid county and helps them locate and make a success after they have decided to come to this part of Florida.

Orange County has 156,000 head of cattle, including some 6,000 pure-bred, first class stock, some of the finest in the state.

Orange County has a most efficient County Agent, C. D. Kime, and County Demonstration Agent, Mrs. Taylor, who are the expert advisors to all in matters pertaining to grove, farm, garden, poultry and everything else that goes to make life profitable and pleasant in this county.

Orange County has two daily news-

THE CITRUS INDUSTRY



papers, the Orlando Sentinel and the Orlando Reporter-Star, two strong weeklies, the Winter Garden Herald and the Winter Park Herald, and a weekly paper sent forth by the Rollins College, called the Sandspur.

Orange County has a great county seat city, Orlando, the city that has grown in ten years from a population of 3,892 in 1910, to 9,282 in 1920, to 12,500 in 1922 and bids fair to become a city of 30,000 by 1930. Orlando's building permits exceeded \$3,000,000 in 1922.

Orange County has a progressive, far-seeing and hard-working people. They believe in this great "Inland Empire" of Florida, they love its climate, its soil and its opportunities. They have come from all parts of America and other portions of the world, and here they are working side by side in the finest possible spirit of co-operation and enthusiastic boosting to make this the greatest county in the

greatest state in the country and the world.

Orange County has plenty of room for all who will come and work and grow with us. There is room for all of the right spirit and purpose. Come and see this county and you will want to buy land and build here with the rest of us. If you are the right kind of an American you will like Orange County and her people and we will like you. You are welcome. Come and grow with growing Orange County.

STATE HORTICULTURAL SOCIETY MEETS IN APRIL

Plans for the annual meeting of the Florida State Horticultural Society were inaugurated at a meeting of the executive committee at Tampa on February 6. The meeting this year will be held in Orlando, in conjunction with the meeting of the Florida State Florists' Association.

The Florists' Association will meet on April 16 and 17. The great floral parade in which many South Florida towns and organizations will participate, will be held in the afternoon of Tuesday, April 17. The Horticultural Society will begin its sessions that night, continuing until the following Friday.

Tentative arrangements for the program made in Tampa are said to assure one of the most interesting sessions the society ever has held. Many subjects of great horticultural interest will be covered by authorities in their respective lines, in addition to which there will be two or more speakers of national renown who will talk upon subjects of particular interest to the assembly.

Orlando was selected as the next meeting place at last May's meeting in Lakeland. Frank Kay Anderson was appointed by the committee to arrange for the official headquarters and the hotel accommodations for both organizations in Orlando.

In addition to completing its arrangements, the committee unanimously adopted a resolution endorsing the attitude of the Federal Horticultural Board at Washington in endeavoring to maintain quarantines against fruit flies from various foreign countries, the importation of which into this country it was declared constitutes a tremendous menace to fruit cultivation here.

Don't let your cow fool you. If she gives a good flow of milk for a few months in the summer time, but "boards on her reputation" the rest of the year, she isn't worth keeping.



Citrus Fruit Culture in Spain

By Robert Harnden, American Consul at Valencia, Spain

HISTORY. Oranges were probably grown in Spain from the time of the Romans, who must have brought with them from Italy this fruit so well adapted to the climate and soil of the southern and eastern sections of the Iberian Peninsula. It is certain, however, that the Moors from the time of their conquest of Spain in the 8th century, cultivated the orange in this country and introduced new varieties from Africa, Asia Minor and Mesopotamia. Lemons were introduced by the Moors in the 12th century. The Mandarin orange has been cultivated in Spain since the 19th century.

DISTRICTS WHERE GROWN. The development of the British market for Spanish oranges during the third decade of the 19th century brought about the planting of orange groves on a large and commercial scale. The chief centers are the Provinces of Valencia, Castellon and Murcia on the east coast of Spain, that district known as the Spanish Levante, and the Provinces of Seville and Cordoba. The fruit is cultivated also in other provinces, but in smaller quantities. Tarragona, Alicante, Almeria, Malaga and others have their orange groves, in fact, there are few sections in Spain where the orange is not grown, but Valencia is pre-eminently the orange region, and it is the Valencia fruit thought of when Spanish oranges are mentioned.

Lemons, on the other hand, are not produced to any great extent in the Valencia district; this fruit is grown extensively, as is the bitter orange used entirely for marmalade, in the Province of Seville.

ACREAGE. It is estimated that the total acreage in Spain planted to oranges is 50,000 hectares, or 225,000 acres. Of these, 40,000 hectares (100,000 acres) are in the Levante section. One-half of this Levante district or about 50,000 acres is within the boundaries of the Province of Valencia. It is stated that the average annual production of oranges in this district is 400,000 tons of fruit, which, at an average price, represents some 150 million pesetas.

SOILS. The Valencia growers maintain that the orange tree is not partial to any one soil; it is adapted to various kinds, provided, always, that it receives sufficient water and fertilizers. Nevertheless, it is found to grow better in compact than in silic-

ious and sandy soils, which are better suited to lemons. The location of the orange groves is determined more by the facilities and distance from a shipping port than by the character of the soil itself. The area devoted to the cultivation of this fruit is limited to the belt of flat and slightly elevated lands lying between the mountains and the sea.

PLANTING AND CULTIVATION. Trees are grown from seeds of the "Borde" (bastard) orange, and when 18 inches high are transplanted about six meters apart each way, about 100 to the acre, and budded or grafted with one of the following varieties:

- A. Fine or Sweet Peel,
- B. Torregrosa,
- C. Cadena (rough peel)
- D. Papales (paper thin peel),
- E. Viciadas,
- F. Royal
- G. Common
- H. Bernas
- I. Common Blood.

The varieties most in demand for

exportation are:

Common: an early orange which is largely exported but of inferior lasting quality.

Common Blood: a later orange but of good lasting quality. Due to its popularity, this orange is being grown in increasing quantities by local orchardists.

The groves are plowed twice a year, once in the autumn and again in the winter. Light plowing is also done in the spring and summer to allow the water, supplied by irrigation, easy access to the roots of the trees. There seems to be a feeling among orchardists here that deep plowing is detrimental to the trees, the superficial roots of which are damaged. But recent experiments have proved that deep plowing results in an abundant crop, the beneficial effects to the soil by such plowing more than offsetting any injury to the trees' smaller roots.

FERTILIZING. The orange groves in this district are liberally fertilized with both organic and chemical fertilizers. Up to the present little attention has been paid to scientific fertilizing, that is, no study appears to have been made of the results and effects of certain preparations on certain trees. The practice has been to apply the same amount and the same kind of fertilizer to all trees regardless of their age and condition. But the subject is beginning to receive expert attention, certain fertilizers heretofore extensively used have been found to increase the growth of the tree rather than its production of fruit. Before applying fertilizers, therefore, an analysis of the soil is now being made and these modern methods resulting in better fruit, better crops and healthier orchards.

It is estimated that the trees of an average orchard extract from the soil per hectare (2.50 acres):

- Nitrogen, 126.9 kilos
- Phosphates, 30.6 kilos
- Potash, 114.9 kilos

This impoverishment of the soil is corrected by fertilizers as follows:

- Sulphate of ammonia, 630.5 kilos
- Superphosphate of lime, 17 per cent, 180.0 kilos
- Sulphate of potash 229.8 kilos

It has been found that from 40 to 50 kilos of iron sulphate per hectare is an excellent fertilizer for most orchards.

IRRIGATION. Due to the climate of Spain, especially in the south irri-

Continued on page 28.

Chicago, Jan. 29, 1923.

Mr. S. L. Frisbie,
Editor & Manager,
"The Citrus Industry,"
Tampa, Fla.

Dear Sir:—

I am reading a copy (Dec. 1922, Vol. 3, No. 12) of your publication, "The Citrus Industry," and should like to have you send it to me regularly for a year. My check for \$1.00 enclosed. Please begin my subscription with your December number, as the copy I now have belongs to a friend, and I wish to get the articles therein for my files. I am certain I am going to enjoy your articles if the December number is a sample of what is to come. With best wishes for the success of your publication, I am,

Sincerely yours,

Dr. L. J. P. DeAlarid.

The Citrus Industry

ISSUED MONTHLY

By

ASSOCIATED PUBLICATIONS CORPORATION
TAMPA, FLORIDA

S. L. FRISBIE, Editor and Manager

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at the postoffice at Tampa, Florida, under the act of
March 3, 1879.

GREAT CITRUS EXHIBITS

Florida has just witnessed the greatest exhibition of citrus products ever assembled in the state, and probably one of the greatest exhibits of citrus fruits ever brought together at one time under one roof anywhere.

The South Florida Fair at Tampa has long been known as the assembling point for Florida's greatest asset and most noted product—citrus fruit. Each year has seen an ever increasing display of these fruits at this fair. But the displays put on by the many citrus producing counties of the state this year proved not only an education to visitors from other states but a surprise to our own people as well. Never before were so many counties represented, and never before was such perfection of arrangement and display achieved as at the fair just closed. No one who witnessed these displays, whether resident or visitor, could fail to be impressed with the magnitude and importance of citrus in the economic development of the state.

But the fair just closed at Tampa is to have a close rival, in the matter of citrus exhibits, in the Sub-Tropical Mid-Winter Fair which opens at Orlando on February 13, continuing until February 17. While not as wide in scope as its more pretentious Tampa neighbor, the Orlando Fair, by reason of its location in the heart of citrus production and at the center of citrus activities, makes an appeal to citrus exhibitors quite as strong as that of the larger fair at Tampa. At Orlando will be seen exhibits from some of the most noted groves in the best citrus sections of the state. Where at Tampa, the rivalry was between counties, at Orlando communities within counties will vie with each other for first place in the estimation of the judges and in the eyes of visitors.

Out-of-state visitors at either or both of these fairs must acquire an enlarged vision of what citrus really means to Florida—and the greater things which it is destined to mean in the years to come.

THE SHIPPING OF CULLS

Many papers of the state have taken up active opposition to the shipment of cull citrus fruit from Florida, calling attention to the fact that while the fruit may be apparently sound at time of shipment, it rarely reaches the market in sound

condition, and its shipment causes loss to all the growers by reason of the bad impression created by the culls.

The Skinner Packing House News goes a step further and says that the sale of culls by fruit stands in the state should be prohibited, as many winter visitors, buying these culls at fruit stands, gain the impression that they represent the best, or at least the average, quality of Florida citrus fruits; while as a matter of fact they represent the worst.

The News is absolutely right. There should be some method for preventing the sale of culls and drops in the open market, either outside the state or within it. Only fruit of standard quality should be permitted on sale in public markets or at public stands. As long as culls and drops are sold, many people are deprived of the joy of eating the better fruit and the market must fight to overcome the bearish tendency exercised by the offering of culls.

There is but one proper place for drops and culls (unless it be the dump pile) and that is in the bins of by-product factories which can work them up without detriment to sale of fruit of standard quality.

EFFECTIVE ADVERTISING

We have before us portfolios showing the newspaper, magazine and class publication advertising of the Florida Citrus Exchange, prepared and placed by the Thomas Advertising Service of Jacksonville and Tampa. All of this advertising is clear-cut and effective, while the color advertisements carried in the magazines of national circulation are as artistic in design as those of any nationally advertised products.

Citrus Exchange advertising has played a foremost part in popularizing Florida grapefruit and oranges, and this is due in large measure to the intelligent and effective handling of the advertising campaigns by the Thomas Agency and the careful discrimination exercised by this agency in the expenditure of Exchange advertising appropriations.

Not only have the citrus growers of the state benefitted by this advertising through the increased popularity and increased sales of Florida citrus fruits, but the entire state has been the beneficiary through the publicity gained by the use of nationally circulated magazines and the great daily newspapers of the North.

It is gratifying to know that Florida has an advertising agency so fully equipped for handling adequately and effectively the great advertising campaigns for which the Florida Citrus Exchange provides the initiative and the funds.

St. Lucie county again captured the grand sweepstakes for the best exhibit of citrus fruits at the South Florida Fair. Capturing grand sweepstakes prizes is getting to be a habit with St. Lucie. But, even at that, there is plenty of honor to go around among the other counties exhibiting at this great citrus carnival.

Our California visitors now know us better than they did. Also, we know them better.

CITRUS BEST HANDLED OF ALL FRUITS

Citrus growers and shippers will be interested in reading the following resume of handling and shipping conditions by the American Fruit Grower Magazine, which places citrus at the head of the list among all fruits in the perfection of the methods in vogue in handling and shipping. The following editorial comment appears in the current number of the American Fruit Grower Magazine:

"Perhaps no development in our American horticulture has been as remarkable during the past three decades as that of our citrus industry. Thirty years ago a few million boxes were thought to be more than the country could consume. Today there are probably enough citrus trees planted to mean that the tonnage in the relatively near future will reach 100,000 cars annually. We can say without much danger of contradiction that it is the best organized fresh fruit industry in America today and it is better able to distribute and merchandise its fruit intelligently than any other fresh fruit agency. It is so organized that it can give a national distribution to avoid gluts and has steadily increased the per capita consumption of citrus fruits in this country as well as abroad. Through intelligent advertising they have converted the people from a holiday consuming public to one that is consuming oranges and other citrus fruits freely every day in the year. The American public has been educated to the food value of the citrus fruits, to their health giving qualities. The American housewife has been taught many attractive new ways in which to use the product.

"Twenty years ago we were eating sour oranges and inferior varieties. Today we have a marvelously fine collection to choose from. In oranges in addition to the Navel, we have the fine summer orange or Valencia, the Indian River, Parson Brown, Pineapple, Temple and the Lue Gim Gong, and we must not forget the Satsuma and tangerine, and the fine varieties of grapefruit and lemons. The grapefruit, unknown thirty years ago, is finding its place on the table of nearly every family. Years ago our lemons were nearly all imported. Today 83% of the lemons consumed in this country are produced in America.

"We are happy in this issue to be able to feature the citrus industry in a number of articles. We want to urge upon growers of deciduous fruits that our brothers engaged in the citrus industry point the way to a permanent success. The more the deciduous fruit growers will copy the practices and learn from the experiences of the citrus growers, the more prosperous the deciduous fruit growers will become."

OUR CALIFORNIA VISITORS

Florida will lose nothing, and stands to gain much, by the recent visit of California citrus growers. Those of the party who came with the idea that Florida had nothing new to offer in the citrus field, went home with an enlarged vision and a better understanding of California's one rival in the citrus world.

There is a wide divergence of methods in citrus culture between Florida and California. Natural

conditions are responsible for this—and nature must be coaxed, not forced. Yet there are many problems which are common to the growers of both states. Floridians who visited California last winter learned many things of value which they have profitably applied to their own groves. Californians returning this friendly call likewise have learned many things which may be profitably applied to California conditions.

But the chief thing which both Californians and Floridians have learned by this interchange of visits is that the growers of the two states have many interests in common which can be better served by friendly co-operation than by unfriendly, cynical criticism.

GROVE HEATING PAYS SMALL GROWERS

Speaking of the tendency of small grove owners to belittle the necessity or desirability of protecting against freeze damage, the California Citrograph says:

"Orchard heating in the small grove does pay. T. R. Woodbridge of Upland proved that conclusively in his paper read at the Citrus Institute. Some owners of small properties are wont to say that 'it's all right for those big fellows to heat their orchards but it won't pay me.' Mr. Woodbridge, who is a very practical grower and who knows his costs, stated that he saved \$9,000 worth of fruit at an expense of \$990.82. He also pointed out that it is a greater tragedy for the owner of a small grove to lose all his fruit through frost than for the company or the owner of more extensive plantings."

The Skinner Packing House News, in its new and enlarged form, is one of the most interesting, valuable and neatest trade journals of which we have knowledge. It is much more than a "house organ" and is of interest to every fruit packer in every line. Manager B. C. Skinner of the Skinner Machinery Co., and Editor Thomas W. Hewlett are to be congratulated upon the success they have achieved with their publication.

Advertisers in The Citrus Industry are becoming accustomed to receiving replies to their advertisements from foreign countries. The Citrus Industry is read in every citrus field.

The grove owner who had his grove supplied with grove heaters slept a little more soundly than the one who was without this protection, the first few nights of February.

Ten years hence, northwest Florida will be as widely known as the home of the Satsuma as South Florida now is as the home of the orange and grapefruit.

Both the avocado and the grape are suitable "side lines" for the citrus grower who would diversify.

Are you ready to begin your spring spraying and fertilizing campaigns?

Many Florida growers are taking kindly to the dusting method of pest control.

Spraying for Citrus Scab

By J. R. Winston, Pathologist, U. S. Department of Agriculture

At best formal spray schedules for the control of citrus diseases are not always satisfactory. In some respects these schedules fall short of accomplishing the desired result and in many instances they are too expensive to be followed and lead to a financial loss rather than a profit. To what extent such a schedule should be followed depends largely upon local and seasonal conditions which can hardly be anticipated by those who have to draw up these outlines to cover a large area for a term of years. Therefore, a spraying scheme that returns the maximum profit from the money invested must, in most cases, be modified by the grower himself or by a competent local advisor to meet his own conditions which may be quite different from those even of his neighbor.

In the majority of cases about 75% of the total protection is afforded by one of the several recommended spray applications, but which particular application will afford the most protection in a given year cannot be foretold with accuracy by anyone. This is especially true of citrus scab, the outbreaks of which are dependent upon a wide range of conditions involving complications too numerous and intricate to be enumerated.

Young grapefruit are susceptible to scab infection from the time the petals fall until they are about $\frac{3}{4}$ -inch in diameter; leaves from the time buds open until they are about $\frac{1}{2}$ -inch in width. In the average grove in Florida fruit may be found in a stage of growth susceptible to infection from early in February until about the middle of April or a little later. It is obvious that sprays applied early in February will afford little or no direct protection to the fruit developing from flowers which do not open until March. It is also obvious that applications put on in late March will afford little or no protection to fruit set in February. If February and March happen to be unusually rainy, several spray applications will be required to afford adequate protection in localities where scab usually occurs in quantity. If the spring months happen to be dry very little scab will develop in the average grove, and spraying will be necessary only in localities where the disease is always serious. These latter conditions have prevailed during the past two years resulting in a marked reduction in the general prevalence of the disease.

Since no one can predict with certainty several months in advance just what kind of weather will prevail during the scab season, three schedules are drawn up to meet the varying degree of citrus scab outbreaks as they occur in Florida groves.

At the present writing it can be said with reasonable conservatism that not more than 10% of the grapefruit groves now give indication of need to be sprayed this spring for scab control, and of that 10% only a small proportion will likely need over one or two applications at the most unless the weather in February and March is especially conducive to scab outbreaks. This assertion is based on the fact that hold-over citrus scab on old leaves is not present in noticeable amounts in the average grove, and in many properties this disease occurs only in faint traces, if at all.

Even if hold-over scab were present in serious proportions throughout the state there are many growers who with well established justification feel that they can afford to make but one application against citrus scab. In such cases the only thing to do is to take a pot shot and trust to luck, realizing all the while that the results of this application, whether they be good or bad, are nothing but luck. Irrespective of the date of spraying a single application should not be expected to give a good commercial control of the disease in years of serious outbreaks. The results of about ten years work by the U. S. Department of Agriculture indicate that under conditions such as occur thus far this season, the one application that will probably do the most good would be made this year in the bloom, probably about March 15-25.

However, it must be borne in mind that growth conditions may be very irregular at that season and that the weather may prove fickle in February and March.

For the guidance of those who should spray several times an explanation of what may reasonably be expected from each of the several listed applications is given below, followed by the spray tables. Bordeaux mixture or Bordeaux-oil emulsion is very effective against citrus scab; sulphur sprays are only partially so. Dusts either as sulphur compounds or as copper compounds have not proved effective against citrus scab.

Application No. I covers the old scab scars before spring growth starts

and is intended primarily as a preventive of infection on young leaves. If this is accomplished the probability of fruit infection later this year is very greatly reduced. This application should also tend to reduce the chances of scab outbreaks next year by reducing the number of infected leaves which will harbor scab over next winter. If February happens to be unusually wet the new flush is very likely to become infected from the scab scars on old leaves unless this application is made. If February is unusually dry leaf infections are not likely to be abundant even on unsprayed trees. According to our tests and observations this application has proved an excellent one in reducing scab outbreaks where there were many old leaves with scab scars or where conditions were unusually favorable for scab infections, but due to the small amount of hold-over scab on the old leaves few groves will need this early spraying in 1923.

Application No. II is intended pre-infection. It is applied in the height of the bloom for protection of the fruit which has just set. It will not afford direct protection to fruit setting from bloom then unopened. If application No. I was put on this application may be omitted with reasonable safety in average years in most groves.

Application No. III usually comes due about the end of the blooming period or possibly a little later. It will afford protection to fruit from the later blooms, and also further protection to the early set fruit. If little or no scab has developed up to this time this application may be omitted in most groves. If application No. I and II have been omitted and there is a fair sprinkling of scab on the new leaves and fruit this application should be made. If application No. II was put on and little scab is present, this application may be omitted in most groves in normal years.

Application No. IV is usually not necessary, but is sometimes advisable where scab occurs in serious proportions, or if the blooming period is drawn out over an unusually long time and the weather is especially conducive to scab development. It is also quite effective against early melanose infections.

Further details about citrus scab are contained in Department Circular 215 of the U. S. Department of Agriculture, "Commercial Control on Citrus Scab"

Spray Schedule No. 1.
(For orchards where citrus scab is always serious.)

Application.	Date	Materials used.	Object.
First applica- tion -----	Just before growth sets in	3-3-50 Bordeaux mixture plus 1 per cent oil (2)	To cover old scab lesions. Direct spray especially toward under-surface of leaves. Reduces very early citrus-scab infec- tions.
Second appli- cation -----	In height of bloom -----	3-3-50 Bordeaux mixture plus ½ per cent oil.	For protection of expand- ing leaves and small fruit against citrus scab.
Third applica- tion -----	Two weeks later	"	For protection of small fruit against scab.
Fourth Appli- cation -----	Two weeks after third applica- tion -----	3-3-50 Bordeaux mixture plus 1 per cent oil.	Advisable if season is rainy for protection against scab. Will also reduce early melanose infection.

(1) Insecticidal applications must follow, to prevent serious scale injury.
(2) Prepare 3-3-50 Bordeaux mixture in the usual way. Three quarts of oil emul-
sion, Government formula, in 50 gallons of Bordeaux mixture gives 1 per cent oil.
Add the oil emulsion to the Bordeaux mixture while the latter is being thoroughly
agitated in the spray tank. Keep up the agitation while spraying.

Preparation of boiled oil emulsion, Government formula.
(See U. S. Dept. of Agr. Farmers' Bulletin 933.)

Paraffin oil ----- gallons ---- 2
Water ----- gallon ---- 1
Fish-oil soap ----- pounds 2
Put oil, water and soap into a kettle or other vessel that will stand fire, and heat
to the boiling point. While still very hot but after removal from the fire, pump the
material into another vessel with a bucket pump and then pump back again.

To insure bright, clean fruit at harvest time follow this schedule
with the regular scale, white-fly, and rust-mite spray applications
(see Farmers' Bulletin 933) and one or two additional applica-
tions to check the heavy increase of insect pests following copper
sprays.

Spray Schedule No. 2.
(For orchards where citrus scab varies from moderate to serious.)

Application.	Date	Materials used.	Object.
First applica- tion -----	Just before growth sets in	3-3-50 Bordeaux mixture plus 1 per cent oil.	To cover old scab lesions. Direct spray especially toward under-surface of leaves. Reduces very early citrus-scab infec- tions.
Second appli- cation -----	In height of bloom -----	Lime-sulphur, 1 to 40 or 3-3-50 Bordeaux mix- ture plus ½ per cent oil.	If season is normal use lime-sulphur; if season is rainy use Bordeaux mixture, to protect ex- panding leaves and small fruit from citrus scab.
Third applica- tion -----	Two weeks later	"	If season is normal use lime-sulphur; if season is rainy use Bordeaux mixture, to protect small fruit from citrus scab.
Fourth Appli- cation -----	"	3-3-50 Bordeaux mixture plus 1 per cent oil.	If season is rainy probably advisable for protection of smallest fruits against citrus scab; will also re- duce early melanose in- fection.

To insure clean, bright fruit at harvest time follow this schedule
by the regular scale, white-fly, and rust-mite spray application.
When Bordeaux mixture is used additional applications of oil
emulsion most likely will be necessary.

Spray Schedule No. 3.
(For orchards where citrus scab is of minor importance.)

Application.	Date	Materials used.	Object.
First applica- tion -----	Just before growth sets in	Lime-sulphur, 1 to 30 -----	To cover old scab lesions; direct spray especially toward under-surface of leaves; prevents early scab infections.
Second appli- cation -----	In height of bloom -----	Lime-sulphur, 1 to 40 -----	To prevent infections on expanding leaves and small fruit.
Third applica- tion -----	Two weeks later	"	To prevent infections on expanding leaves and small fruit. (Advisable only if season is especial- ly favorable for scab de- velopment.)

To insure clean, bright fruit at harvest time follow this schedule
by the regular scale, white-fly, and rust-mite spray applications.

Nurseries can be kept commercially free from citrus scab by
occasional applications of Bordeaux-oil emulsion. As a rule,
monthly applications probably will afford adequate protection.
In many instances a smaller number of applications will suffice;
however, the frequency of application is dependent upon local and
seasonal conditions. Care must be taken to keep new flushes
protected during periods of wet weather.

Public Sales

We have purchased 122,000 pairs
U. S. Army Munson last shoes,
sizes 5½ to 12, which was the en-
tire surplus stock of one of the
largest U. S. Government shoe
contractors.

This shoe is guaranteed one hun-
dred percent, solid leather, color
dark tan, bellows tongue, dirt and
waterproof. The actual value of
this shoe is \$6.00. Owing to this
tremendous buy we can offer same
to the public at \$2.95.

Send correct size. Pay postman
on delivery or send money order.
If shoes are not as represented we
will cheerfully refund your money
promptly upon request.

**National Bay
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296 Broadway, New York, N. Y.

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NO MORE "pump and carry." The
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fresh water, at the turn of a tap-
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Quiet, safe, economical, self-oiling,
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ers. See your dealer or write today
for catalog.

**The F. E. Myers
& Co.**
801 Church St.
Akland, Ohio




Bright Outlook in Citrus Industry

Business Manager C. E. Stewart, Jr., of the Florida Citrus Exchange, has given out the following statement with reference to the citrus crop and movement for this season, as conditions have developed thus far this season.

Groves in Fine Condition

Florida groves are in a very satisfactory condition, and are not suffering for rain. There is very little bloom apparent at this time, which is most fortunate, because the first part of February is our most dangerous frost period. There is now every indication that the trees will not be in full bloom until after the severe frost period is past.

Trees are holding their fruit splendidly, and although some dropping has occurred, it is not of a serious nature, and the fruit on the trees is in excellent condition. A large amount of this fruit, both oranges and grapefruit, is late bloom and has a splendid appearance and quality. This will prolong the shipping season for Florida, giving probably the longest season the state has ever had, as shipments started early in September and will likely continue, especially in grapefruit, up to the first of July.

Various estimates have been given out regarding the amount of fruit left in the state. From best information obtainable it is probably safe to say that approximately 50 per cent of the crop has been moved.

Large numbers of refrigerator cars have been released by the railroads at northern destinations for southern shipping. The present supply is sufficient for the movement of citrus fruits and indications are that there will be an adequate supply to accommodate the entire movement for the balance of the season.

Shipments Compared with Last Year

1921-22—Oranges, 11,141 cars; grape fruit 7,133 cars. 1922-23—oranges 13,659 cars; grapefruit 8,403 cars. Total cars, 1921-22, 18,274; total cars 1922-23, 22,062. Increase, 3,788 cars.

The total shipment of 22,000 cars to February first at 360 boxes to the car would equal 7,920,000 boxes that have moved into the various markets. Estimating the average price received at the conservative figure of \$2.50 f. o. b. packing house, means the sum of \$19,800,000 of new money brought to the state by the citrus industry up to this time.

Market Conditions

In some eastern markets higher prices on oranges are noted, notwithstanding the heavy movement. The demand exceeds the supply in small

sizes. Auction prices range from \$4.25 to \$5.50 for desirable stock. In the middle west the trade is generally well supplied and prices are easier, owing to indiscriminate competition. In the west the markets are firm on good stock, showing a lower tendency due to heavy shipments of California navels of choice quality. Grapefruit prices are easier in certain markets where excessive quantities have been offered; this is especially true in the eastern markets. The western outlet continues good for grapefruit. While the trade is pretty well supplied in all sections, the consumer demand keeps the market in a fairly good condition. The tangerine market is generally easier, though good stock is finding a ready sale at fancy figures. While there is a splendid demand for exceptional quality, much of the stock moving is light and puffy and subject to heavy discount.

The general feeling is that market conditions are steadily improving and that Florida fruit is now at its best in eating quality and juice content which is in direct contrast to the California movement. California navels are running heavily to large sizes, while a larger percentage of Florida fruit is medium to small, which is a decided advantage in meeting California competition.

General business conditions have been reported improving steadily, and with international matters giving promise of being satisfactorily adjusted in the near future, such as the acceptance by Great Britain of our terms regarding her loan, business is expected to receive an added impetus, which will surely be reflected in the citrus markets. Collections have been satisfactory throughout the entire season, and although there have been some failures, they have been widely dispersed, and of little consequence.

Canned Grapefruit

The canning of grapefruit promises to become a new industry for the state of Florida. Cooperative canneries have been established and the product has met with ready sale. Its acceptance by the trade is comparable to the acceptance of the Hawai'an canned pineapple, and a brilliant future is undoubtedly possible for a high class product. The fruit used in canning is the off grade, off size misshapen stock that does not meet ready sale when packed and shipped to the markets.

California Crop Estimate

California citrus authorities state that a re-estimate has been made, as of January first, indicating that they

will ship during the entire season of 1922-23, approximately 57,919 carloads of oranges, lemons and grapefruit. This shows an increase of 3,233 cars over the November estimate, which is attributed to the growth of fruit on the trees, caused by ideal growing weather. Indications are that the navel crop will run extremely heavy to 126's and larger. Not since 1918 have such large sized oranges been shipped from California. Low temperatures reported from California have resulted in no damage to date.

SPRAYING FLORIDA FRUIT PROFITABLE INVESTMENT

Under Florida conditions, spraying which has been consistently recommended by the bureau of entomology of agriculture for many years, is the most effective method of controlling citrus pests, according to the secretary of the department of agriculture. "While no exact estimate is made of the profits to be expected from money expended in spraying," he says, "growers find that the returns are entirely real and appreciable. The grade of the fruit is raised so that it brings a better price, and the yield is increased by preventing the devitalization of the trees following insect attack.

"High-grade fruit can be sold when the owner desires to sell it. The lower grades can be sold when the buyers want them, or when the market calls for lower grades. It has been shown in the case of other citrus crops that there was a loss of over \$500,000 due to the lowering of the grades of the fruit caused by easily preventable pests. The reduction in size of the fruit caused an additional loss of \$475,000, and the reduction in yield caused a loss of \$760,000, making a total of \$1,744,955, which practically all could have been prevented easily at a nominal cost. To spray this crop at 6 cents a box would have cost \$456,000, leaving a profit of \$1,288,955, or 282.7 percent profit on the investment.

The best color combinations for a room will have the floor dark, the walls lighter, and the ceiling the lightest of all.

I value the delicious homefeeling as one of the choicest gifts a parent can bestow.—Washington Irving.

The great rural interests are human interests, and good crops are of little value to the farmer unless they open the door to a good kind of life on the farm.—Roosevelt.

The world may not owe any man a living, but it certainly does owe him the opportunity to make one—and the world usually pays its debts.

As long as farm folk keep their feet on the ground, why worry about those who don't get off a pavement except to go up in the air.

CLASSIFIED ADVERTISEMENTS
The rate for advertisements of this nature is only three cents per word for each insertion. You may count the number of words you have, multiply it by three, and you will have the cost of the advertisement for one insertion. Multiply this by the total number of insertions desired and you will have the total cost. This rate is so low that we cannot charge classified accounts, and would, therefore, appreciate a remittance with order. No advertisement accepted for less than 50 cents.

REAL ESTATE

FOR SALE: Splendid solidly bearing orange grove in one of the best orange producing sections of the state. Soil of the best to be found anywhere. Quality citrus fruits produced up to the highest standard of excellence. Reason for selling, moving away. It is an opportunity worth while to some one. Address Box 114, Citra, Fla. 2t-pd

10 ACRE ORANGE, grapefruit grove, 6 years old, Lakeland Highlands, next to Haskell Townsite on Dixie Highway, near Haskell station and packing house Owner, H. J. Strimple, Penns Grove, N. J.

WILL EXCHANGE West Texas cattle ranch for unimproved or improved land in Florida. What have you? Give price and full particulars. T. E. Bartlett, 3410 McKinley Ave., El Paso, Texas.

CALIFORNIA

\$5,000 CASH—\$5,000

Balance 1-2 NET profits from crops. 20 Acres full bearing Navels. \$10,000 eight room house.

Chance to acquire beautiful home and profitable business with small outlay.

Buyer must know citrus culture and reside on property.

Other business interests cause this exceptional opportunity.

CLARENCE GELDERT, Owner. 1765-G North Bronson Avenue, Los Angeles, California.

EARLY BEARING Papershell Pecan trees, budded or grafted and guaranteed. Great shortage this year. Write for catalog today. Baas Pecan Company, Lumberton, Miss.

COMPETENT CITRUS GROVE manager with years of both technical and practical experience wants position. Excellent references. Address Wm. J. Rahn, Route 1, Van Dyke Station, Tampa, Fla.

WANT to hear from owner having farm for sale; give particulars and lowest price. John J. Black, 180th Street, Chippewa Falls, Wisconsin. Dec. 3t

NURSERY STOCK

FRUIT TREES—Large stock of all kinds of fruit and ornamental trees, roses, shrubs, vines, etc. Order direct from growers. Most complete line offered in Southwest. Free catalogue. Express paid. Consolidated Nursery. Houston, Texas. tf

ADAPTED BUNCH GRAPES bring paying returns eighteen months after planting. Plant an acre and be independent; best commercial fruit invest-

THE CITRUS INDUSTRY

ment in south, fruit brings highest prices. We introduced these grapes into Florida and they have been doing well ten seasons. Other adapted fruits also—tree blueberries, blackberries, figs, etc. Full information, free catalogue. Adapted Nurseries, Tampa, Fla. 100-tf

PAPER SHELL PECAN GROVE. Most trees 12 and 13 years old, which is full bearing age. Good condition. Forty acres. Located near Monticello, Fla. Price \$500.00 per acre. Simpson Orchard Co., Vincennes, Ind.

FOR SALE—700 Valencia, Pineapple, Marsh 4-year buds. Probably best in state. 1000 nursery stock. Sealed bids, Dec. 20. For information apply U. S. Dept. Agriculture, Box 1058, Orlando, Fla.

MISCELLANEOUS

WHITE WYANDOTT Cockrels, regal strain—the best in the country, direct from Martin pens. Utility and show birds \$5.00 each; also eggs for hatching \$5.00 per 15. W. A. King, Gen. Del., St. Petersburg, Florida.

FOR SALE—Dairy and stable manure, car lots. Link & Bagley, Box 2461, Tampa, Florida.

EXPERIENCED CITRUS MAN wants position as superintendent or manager where good grove work is appreciated and the owner willing to pay for it. Address P. O. Box 1254, Tampa, Fla.

SOUTHDOWN SHEEP, White Rocks, Toulouse Geese, Guineas, Angora and Milk Goats, Circular free. Woodburn, Clifton, Va.

BROTHER:—Pleasant Florida root easily, inexpensively overcomes any tobacco habit. Fine for stomach. Send

Fifteen

address. R. B. Stokes, Mohawk, Florida. 2t

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who are interested in maintaining or increasing the productiveness of their soils.

These bulletins will be written in plain, understandable language for farmers who grow

Productive Fruit and other Crops

They will contain the latest developments of methods for growing larger and better crops.

They will be issued at intervals and will be mailed free to farmers.

Your address on a Post Card asking for my Bulletin Service will bring them to you as issued, covering a period of a year or more.

They will make an interesting and valuable addition to the farm library.

Dr. William S. Myers, Director
Chilean Nitrate Committee
25 Madison Avenue, New York

Future Citrus Profits Depend On The Trees You Plant

Good trees are the foundation of a profitable grove. It pays to plant the best, regardless of first cost. Choose your trees as carefully as you do your friends. The Buckeye catalogue tells how to select citrus trees that will abundantly repay your care and patience in bringing a grove into bearing. May we mail you a copy?

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THE CENTER OF TAMPA

Increased Citrus Crop in Malaga District

Consul Gaston Smith, Malaga, Spain.

The citrus crop of 1922 in the Malaga district, Spain, is estimated at from 25 to 30 per cent larger than that of last year. On this basis the present crop will amount to the following quantities: Lemons, 160,000 to 178,000 boxes; bitter oranges, 100,000 to 120,000 boxes; sweet oranges, 90,000 to 110,000 boxes. The weight of each box is approximately 55 to 60 kilos, or 111 to 132 pounds. The quality of the fruit is excellent, although lemons grown locally are, as a general rule, of inferior character, having a heavy skin or rind and little juice.

Great Britain is the principal market for the fruit produced in the Malaga district, and takes over 50 per cent of the lemons, and nearly all of the bitter oranges, sent out of the district; therefore British demand controls local prices. At present this demand is indifferent and prices are from 30 to 50 per cent less than last year. Other markets for Malaga lemons are: Buenos Aires, whose takings are 15,000 to 20,000 boxes; the United States, 15,000 to 40,000 boxes; and France, Belgium, Holland and the Scandinavian countries, whose average takings amount to 40,000 or 50,000 boxes. Bitter oranges are sold almost exclusively in Great Britain, and their exportation from Malaga begins during the first days of November. Prices received by producers this season are estimated at from 12 to 14 pesetas per 1,000 oranges, at the railroad station, in bulk (the exchange rate of the peseta on September 11, 1922, was \$0.154). The export of sweet oranges begins on or about October 10. The greater portion of these will be taken by the United Kingdom, with France, Belgium and the Scandinavian countries following in the order named.

The present prices of oranges to the producers are from 15 to 20 pesetas per 1,000, in bulk, delivered at the railroad terminal. Prices offered at present in the British markets are from 15 to 20 shillings per box of 60 kilos net, c. i. f. British ports. Prior to the war, Germany purchased a large portion of the Malaga citrus fruits, but this year the prospects for shipments to that country are poor. Under favorable conditions, about three-fourths of the Malaga citrus fruits are exported, the remainder being disposed of in local markets. Lemons remaining on hand are used in the manufacture of citric acid, while

some of the bitter oranges are used in making orange pulp for export; the skins and peelings are dried and exported in that form. The data in this report are based on information obtained from three of the most important exporters, and two of the prominent producers of citrus fruits in Malaga. No official statistics of the citrus-fruit production in the Malaga district are available.

The man who thinks all he needs to do to acquire fame and wealth is to buy a lot of purebred cattle, hogs, horses or sheep and then proceed to let them shift for themselves, has another and wiser thought coming.

The prompt application of cold water hardens hot grease spilled on the floor and keeps it from going into the wood. Then it's easy to scrape it off and remove the stain with a wet cloth sprinkled with washing soda.

Early sweet potato plants grown under the supervision of State Plant Board officials and shipped to growers north of us, will bring the lucky Florida farmer ready money early next spring. Winter is the time to start. Call upon the Plant Board at Gainesville.

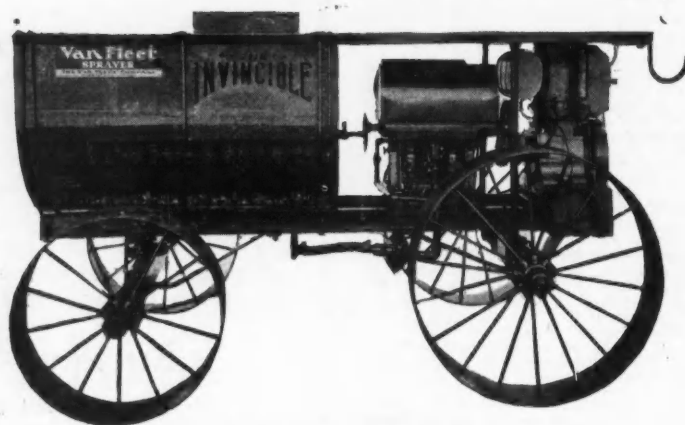
When storing sweet potatoes, remember that 40 pounds will occupy one cubic foot of space. A storage bin 10x10 feet and 6 feet deep will hold 400 bushels, an average of four bushels to each square foot.

Agents, \$10 to \$20 a Day!

Get quick results. Coin money fast. Handle Ideal Self Heating Solder. Not a thing like it. Fire inside. Boils while ironing. Women wild about it. Makes ironing a pleasure. Saves steps. Lessens fatigue. Can use it anywhere. No hose. No wires. No connections. No hot fire. No scorch bottoms. Average ironing costs less than two cents. It is absolutely safe. Guaranteed. It's a wonderful selling proposition. You can make big profits.

Others Sell from \$60 to \$120 Weekly!
Myers, Ia. writes: "Nothing to it, average \$80 week easy!"
Samson, Mich. says: "Having great success, just had another \$20 day!"
Baker, Ind. states: "Women delighted, am running around \$90 week!"
Many others enthusiastic. All making money. Practically sells on sight. A wonderful proposition. Five sales out of seven demonstrations. No long spell. Show and sell. Price is right. Hustlers knock out big money. It is not sold in stores. Exclusive territory. Write or wire for county.

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With a new type high pressure high duty pump and new Auto Type Engine

DUST AND SAND PROOF—RUNS IN OIL

The new Auto Type Engine is an innovation in engines for spraying machinery. It is entirely enclosed, which makes it sand and dust proof, and runs in oil.

EASILY AND ECONOMICALLY REPAIRED

All parts of this engine are interchangeable with Ford Motor parts, which means economy and prompt service in replacements.

THE PUMP

Is something new in Florida. It is also protected from sand and dust by being completely enclosed and running in oil. Prices and full details upon application.

THE VAN FLEET CO.

Florence Villa, Florida

FLORIDA NOT ALONE A SUFFERER FROM CITRUS CANKER

With thousands of bearing trees burned or otherwise destroyed, Florida has paid a price for the citrus canker that it has had. But it is not alone in this, for this most serious disease of citrus that has ever been known to exist is reported as being in all citrus-producing states of America, except California and Arizona, and in Australia, Straits Settlements, India, Ceylon, China, Japan and the Philippines.

It is said that even in countries where supposedly resistant citrus types are grown, this disease is taking its toll. Authorities in charge of canker eradication in South Africa are quoted as saying that 69 groves in that political division have been infected and that more than twelve thousand navel orange trees have been destroyed since 1917.

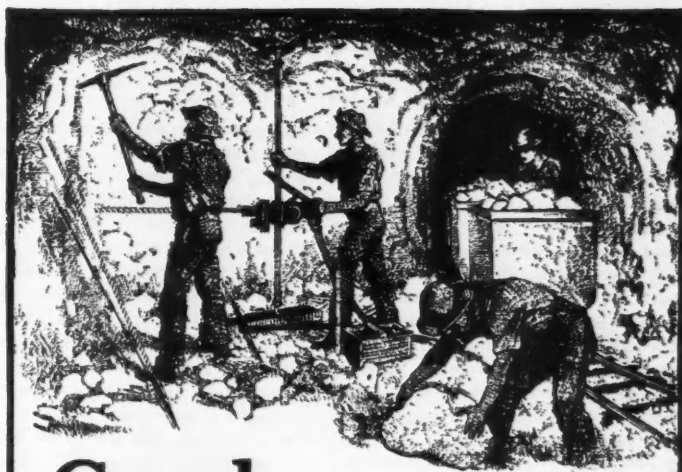
Coming closer home, a citrus canker inspector in Texas reports that about thirty properties have been added to the canker-infected groves of that state within the last year. Canker has been in Louisiana for a long time, and the latest reports are to the effect that at least six properties in that state are now suffering from the blight of this disease. It is said that in Mississippi canker has been found in groves every month since June of 1922, except July and August, that more canker was found there during 1922 than any year since 1917. Even Georgia, which does not touch the Gulf, has had citrus canker, altho in very limited amounts.

Nowhere has outbreaks of citrus canker been met with such determined organized and systematic resistance as in Florida. Within a few months after its first appearance here (in 1912), the State Plant Board had been created and was functioning. The Florida Plant Board's method of eradication is being copied and followed by other states and countries.

All the money you spend on the science of agriculture will be returned to you ten-fold in the increased prosperity of the country.—James Bryce.

Much soil fertility is lost every winter by soil washing or erosion. Put a stop to it by keeping the hilly lands in sod, planting a cover crop, providing under-drainage, filling the gullies with brush, terracing, etc.

Every day the diet of the child should contain some milk; eggs, fish, fowl or meat; bread and cereals; vegetables; fruits, sweets and fats.



Mining German Potash

Good Healthy Crops

It has long been known that *German Potash Salts* prevented certain plant diseases, as well as greatly increased the quantity and improved the quality of crops.

Scientific investigation now shows us that not only *Potash* but also *Magnesia* is required to prevent certain plant diseases.

The *German Potash Salts* contain *Magnesia* as well as *Potash*.

If you insist on having your fertilizer contain from 5 to 10 per cent of *Potash*, derived from *Genuine German Potash Salts*, you will secure at the same time enough *magnesia* to prevent plant diseases due to *magnesia* hunger.

For **Tobacco**, and for those **Fruits** which are injured by Chlorin, the fertilizer should carry 10 per cent of *Potash*, derived from *Sulfate of Potash* or from *Sulfate of Potash Magnesia*.

Use the latter if your tobacco leaves are not sound.

SOIL & CROP SERVICE, POTASH SYNDICATE

H. A. HUSTON, Manager

42 Broadway

New York City

POTASH PAYS

Spring Fertilization

By J. G. Grossenbacher

The month of February is the best time to make the spring application of fertilizer to bearing groves. For young trees late February and March is more timely. Many growers assume that the spring application is a large factor in the development of the bloom and therefore are inclined to spread this in January rather than February. As a matter of fact, however, the fall or November application along with the previous season's treatment and amount of bearing are really much more potent in the matter of spring bloom. The spring fertilization is more effective in determining the amount of bloom to set fruit. Owing to the more rapid action of nitrate of soda this is sometimes used in spring to induce a more profuse bloom but it seems that even such a quick-acting source of ammonia usually fails to produce the desired results except in case a very dry early spring is followed by rain and extra good growing weather. As a matter of fact, the nitrate of soda given in late November, or along with the fall fertilizer, is much more likely to result in an extra amount of spring bloom on a grove that is loaded to the limit the preceding year. It seems to me, therefore, that the spring fertilization is given mainly to maintain and retain as much of the bloom as the condition of the trees and the weather will permit, as well as to supply the necessary foods for the production and maintenance of new growth.

The resumed and increased vegetative activity of trees is accomplished by a similar re-awakening of activities in the soil. Soil organisms instrumental in the elaboration of fertilizer in the soil become more active at this time and on that account it seems desirable to use a mixture containing considerable organic or decayable materials. The main commercial sources of such organic materials suitable for use in mixed fertilizers for citrus trees are bone, tankage, fish scrap, and dried natural manures. Bone and tankage supply both phosphoric acid and ammonia in considerable amount while natural manures usually do not run so high in these ingredients, but all of them are suitable materials for the normal maintenance of soil organisms of desirable types. These substances help to insure good conditions for normal root action of trees and provide suitable soil solutions to be taken up by the roots.

Experience has shown that raw and

steamed bone meal make a good base on which to build up a fertilizer for spring use. Much of the phosphoric acid and a large portion of the ammonia are thus obtained from bone. The balance of the ammonia may then be derived from inorganic materials: nitrate of soda and sulphate of ammonia. Usually it is desirable to derive most of the additional ammonia from nitrate of soda for bearing trees, while young trees appear to do as well on sulphate of ammonia.

I would suggest, therefore, that the composition of the spring fertilizer be based either on raw or steamed bone meal, so that most of the phosphoric acid may be derived from that source; only enough acid phosphate to be used to permit easy manipulation in the factory; and that for bearing groves at least a larger portion of the balance of the ammonia be derived from nitrate of soda.

The formula to use depends upon condition of trees and the amount of fruit borne from the last year's bloom. For groves that bore a heavy crop I would suggest the use of a 4-8-3 or a 4-8-5, but groves that had a light crop and got a fair amount of fertilizer last year should have a 3-8-3, or a 3-8-5. The number of pounds per tree should be fairly liberal. Non-bearing size trees should also have a 4-8-3 with a bone base.

After the spreading of this fertilizer the groves should be given very thorough cultivation to insure that the fertilizer has been worked in as well as possible, and then the regular cultivation of all high-pine and high-hammock groves should be kept up at frequent intervals until the rainy season in late May. The same applies to most flatwoods groves.

Miss Estelle Bozeman, food conservation specialist of the Home Demonstration Department, Tallahassee, has been asked by hotels to secure 72 dozen containers of the citrus preserves, jelles, marmalades and crystallized fruits which are put up by club women and girls of this state. The order has been filled.

The water-glass method of preserving eggs is practical and cheap and easy. Ask your county or home demonstration agent to tell you how it is done.

Thanksgiving isn't so much a day as a state of the mind.



Service to Growers Built This Immense Business.

V-C Fertilizers come to you from the largest makers of fertilizers in the world. This big business was, and is, made possible only by superior V-C service, and the known dependability of V-C mixtures.

V-C formulas are calculated for every varied need in the care and cultivation of citrus trees. V-C experts are working constantly for the benefit and the advancement of citrus growing. The Florida division of this company is dedicated to the solution of Florida growing problems.

For nearly a quarter-century we have been serving the growers; and it is a matter of pride that many of the customers of the early years of our endeavor are today numbered among our best customers.

V-C Fertilizers aided largely in building their successes. Today they continue to rely upon them; and advise others to do likewise.

Write us your needs.

**Virginia-Carolina
Chemical Company**

Florida Division

E. B. BROWN, Manager

Jacksonville, Fla.



**VAN FLEET COMPANY ANNOUNCE
NEW SPRAYER WITH NEW
TYPE PUMP AND AUTO
ENGINE**

The Van Fleet Company, of Florence Villa, announces a new sprayer which they are launching under the name of the New Invincible.

One of the features of this new sprayer is the new auto type engine, being entirely enclosed and sand and

THE CITRUS INDUSTRY

dust-proof and running in oil.

The motor parts are all interchangeable with Ford motor parts, making it possible to secure replacement parts from any Ford dealer at a minimum loss in time and expense.

The engine is light in weight and a simplified type, has surplus power, simplicity, durability and economy.

The pump used on the Invincible sprayer is a new type in Florida, being completely encased and protected from all sand, dust and foreign

matter, and its movable parts are lubricated by continuous oil bath.

Agriculture is the noblest of all alchemy; for it turns earth and even manure into gold, conferring upon its cultivator the additional reward of health.—Selected.

Labor is life. It is all thou hast to confront eternity with. Work then like a star, unhasting, yet unresting.—Carlyle.

Nineteen

**For Bigger,
Better Crops
Use**

**BRADLEY'S
FERTILIZERS**



*Built Up to a Standard
Not Down to a Price*

**THE AMERICAN AGRICULTURAL CHEMICAL CO.
916 GRAHAM BLDG., JACKSONVILLE, FLA.**

Sub-Tropical Fruits 'Round the World

So rapidly has grown the fresh fruit and vegetable industry on the west coast of Mexico, in supplying United States and Canadian markets, that plans are announced to establish ice factories and refrigerating plants in many towns along the Southern Pacific of Mexico, says a report just received by the Department of Commerce from Consul Henry C. A. Damm, Nogales. These plants are now necessary to keep the increasing shipments of perishable products in good condition en route, as the present system of sending ice from Nogales, Ariz., to the shipping points in Mexico is becoming antiquated.

English Getting Palestine Oranges

The first shipment of 15,000 cases of oranges left Jaffa, Palestine, for England recently under arrangements completed by the growers and shippers association of Jaffa with the shipping companies. According to a report just received from Vice Consul George C. Cobb, regular shipments will be made every ten days. The prospects for the coming season are considered to be good, merchants at present paying as much as P. T. 25 to P. T. 28 per case to the growers, ex orchard.

Caesar Gave Spaniards Start in Fruit Business

Introduced into Spain probably by the invading Romans, orange culture has been so favorable and the fruit so well adapted to the climate and soil of the peninsula that today the growing and export of oranges is a leading industry of Spain. Beginning with but a few trees planted at the headquarters of the Roman legions, orange orchards are now found throughout all Spain. From the time of their conquest of Spain in the eighth century, the Moors cultivated the orange and introduced new varieties from Africa, Asia Minor and Mesopotamia. Lemons were introduced into Spain by the Moors in the twelfth century, and the Mandarin orange has been cultivated since the nineteenth century. The development of the British market for Spanish oranges during the third decade of the nineteenth century brought about the planting of orange groves on a large and commercial scale, says Consul Robert Harnden, Valencia, in a report to the Department of Commerce. The chief centers are provinces of Valencia, Castellon and Murcia, on the

east coast, and the provinces of Seville and Cordoba, although the fruit grows well throughout the whole country. It is estimated that the total acreage devoted to oranges in 900 of which are in the Levante section.

More Mexican Bananas for United States

Shipment of bananas from the Mexican port of Salina Cruz to Los Angeles are now being regularly made, special refrigerating cars and boats being pressed into the service. According to a report from Vice Consul Seltzer, Salina Cruz, to the Department of Commerce, it is intended to make weekly shipments of 15,000 bunches, the vessels making a speed which should land the fruit in Los Angeles in from eight to ten days from the time of loading at El Hule.

CALIFORNIA CITRUS TO BE OF UNIFORM GRADES

(Produce News)

For the first time the California orange is to be standardized, so that the joint Federal and State inspection certificate can be issued covering any car offered to the eastern trade. Only those experienced in the citrus deal can appreciate just what this means to the trade—and eventually to the grower and independent packer. Since the inspection certificate will be accepted as proof in any court, the Exchange will in time without doubt call for inspectors—particularly if there are any more cars to be sold f. o. b. as was the case recently in Orange county.

One of the last acts of Chief Read, of the State Bureau, before resigning to join the California Fruit Exchange at Sacramento, was to place the matter before Southern California citrus shippers. Last week an informal meeting was held and first steps were taken looking towards the formulation of specifications to cover the two or three grades now recognized by commercial packers.

At first the state officials will go slow in enforcing the standard, so that all hands may become thoroughly acquainted with the details. The program is to use every effort to make a certificate reading "fancy" mean actually fancy fruit in every particular. One reading "choice" will be choice only, and will have no

"standards" in the car. Step by step the inspection force will seek every effort to raise the standard, so that any eastern buyer may purchase fruit without hesitation when the sale is covered by a state inspection certificate.

Independent shippers and packers are a unit, it is claimed, in favor of the new practice. One of the largest individual packers in the state says that it will mean many thousands of dollars for him in the future, since there will no longer be any questions raised as to grade of his fruit. Logically, those houses which have always had the name of packing only the finest fruit will continue to have the preference of the trade.

One house in Riverside for many years has packed but two grades, yet it has such a record that its fruit commands a standing premium of \$1 box average year in and year out in the eastern auctions, where all of it is sold. And this is an independent packer, who has never entered into any combinations with either co-operatives or other independents.

Different menus and suggestions for the school lunch may be had upon request to the Home Demonstration Office, Florida College for Women, Tallahassee, for Extension Bulletin 4. Care of the child of pre-school age is discussed in Bulletin 3, and of the baby and its mother in Bulletins 2 and 1.

Handle newly dug sweet potatoes more like eggs than brick—they will keep better.

MYERS

HONOR-BILT

SPRAY PUMPS



FOR quick, thorough spraying Myers Spray Pumps are unequalled. Hand Pumps, with easy operating cog-gear handle—Power Pumps with automatic pressure control—give powerful, penetrating spray that reaches every leaf and blossom. The Myers line includes Pumps for Every Purpose, Hay Tools and Door Hangers. Ask your dealer or write us.

The F. E. Myers & Brother Co.
890 Church St.
Athens, Ohio

Free Booklets on Request

Plant this Year for the Future



You can find no better investment than fruit and nut trees. Roses, shrubs and vines for the home grounds also pay.

Plant peach and plum orchards if you can; trees in odd corners or among young citrus anyhow. Pecans are fine for shade and in groves or as single trees will earn big dividends.

Florida is ideal for roses and a large number of other ornamentals. A few dollars will buy enough to make a wonderful change in home surroundings and make your place worth more money.

Our new catalog and planting guide will help you to select the best trees, shrubs and plants for your needs. Write today for free copy.

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C. M. Griffing & Co. 1560 College Street
JACKSONVILLE, FLORIDA

Bluestone Sulphur Fish Oil Soap

Miscible Oil, Dry Lime Sulphur
Lime Sulphur Solution, Caustic Soda
Black Leaf "40"

FERTILIZER MATERIALS
NURSERY STAKES

Write, Wire or Phone

Chase & Co.

SANFORD, FLORIDA

The Largest Complete Stock of
Growers' Supplies in Florida

Notice, Grove Owners A & P Disinfectant

has proved itself in Orlando and Orange County during the last twelve months and we are now in a position to show you that A and P Disinfectant will stop and cure all

FOOT ROT AND DIABEC, AND KILL THE WHITE FLY, RED SCALE, LEMON SCAB AND COTTON CUSHION

Not only will it do that, but it will absolutely fertilize the ground, promote growth, and put more fruit on the trees. We can show you young trees we have put on a growth of eight inches the last four months over others same age and size. We can show you others where we have put on a growth of over a foot in the last seven months, over others the same size and age. We can show you all kinds of vegetables we are taking care of and prevented them of having any bugs or worms, especially cucumbers, watermelons and celery.

For rose bushes, ferns and all flowers and hedges we can promote a new growth and add health and color to them with A and P.

Seeing is believing and we have it to show. If interested we will have one of our agents call on you or we would be pleased to have you call at 863 West Central Ave. A and P also kills the peach Borer on peach trees. A and P is absolutely non-poisonous.

Alvord Sanitary Co.,

863 W. Central Ave.

Orlando, Florida

Gautemalan and Mexican Avocados in Florida

By John B. Beach, West Palm Beach, Fla.

The avocado which has been grown commonly in Florida is of the tropical or West Indian type, and only within the past fifteen years have any of the Gautemalan type been tried.

The first were from seeds introduced by the Bureau of Plant Industry, and afterwards we began getting scions, and occasionally a budded tree from California. The scions were mainly used for top-working old trees by cleft grafting, which produced fruit in a few years' time. Thus we fruited many of the California introductions almost as soon as they bore in California. In like manner several of the new introductions made in 1916 and 1917 by Wilson Popenoe for the Bureau of Plant Industry have already fruited here, and many more are setting fruit and promise to give a good account of themselves. Of the former, Nimlioh (44440) produced some typical fruit, corresponding closely in every particular to his official description, and ripening in March.

Panchoy (44625) ripened in December, and proved exactly identical with the official description in every particular. It is also a good grower.

Lamat (43476) made one fruit, which was delayed in shipment to Washington, so that it spoiled before it was received. It does not appear as vigorous a grower as the other two.

Of the California introductions, Blakeman has fruited for several years, and produces fruit of good quality, weighing up to 1½ pounds, and maturing in January and February. It seems generally a good grower, though differing in that respect in localities.

Champion has not proven successful, and has been abandoned.

Dickey has been fruiting with Mr. Cellon at Buena Vista, and seems to be a good grower, productive and of good size and appearance, as well as quality. But it is so difficult to propagate that he has but two trees of it. The season is November, rather early for the best markets in Florida.

Dickinson is doing better in some places than others, but as yet has not matured any fruit.

Lyon has so far shown an exaggeration of the faults it has in California, and what fruit has been produced generally cracked before maturity.

Meserve I have abandoned, because

of lack of vigor, but Mr. Krome has trees which are doing fairly well and have produced good fruit weighing 16 to 18 ounces, ripe in January and February. It has done as well at the station at Miami.

Royal was fruited by Mr. Hendry at Ft. Myers, but was very small and was deemed by him as worthless. From this variety Walker's Royal, strange as it may seem, have come two seedlings which are now among our most popular commercial varieties, and many acres are being planted to them in Dade county this year. They are Taylor and Wagner. It seems that the two seed were taken from specimens of Walker's Royal sent to Washington, and one seedling was sent to California, and became the parent tree of Wagner, while the other, planted at the Miami Experiment Station, has become our Taylor.

Wagner has been bearing for Mr. Krome two seasons, and he has had fruit as large as 22 ounces, though the average weight is considerably less. The quality is good, and it seems to be a free bearer, while it begins bearing young. The season is January and February.

Taylor, the Florida brother of the above, has been bearing 5 or 6 years, and has proven a reliable cropper of fair quality and medium size, strongly resembling Wagner in foliage and habit of growth, but more vigorous and not quite as good in flavor. Its season is January and February. This variety has made a record which entitles it to recognition as of commercial value.

Atlixco has shown superior quality and excellent size, averaging 20 to 24 ounces, and running up to 26; season February and March; good grower.

Fuerte has shown itself universally an excellent, thrifty grower and generally a good bearer. Some find it maturing in November, while others find it a December, January and February fruit. This difference may be due to the fact that avocados of this type often blossom several times and sometimes the early bloom will make the crop while in other instances it may be a later bloom. Mr. Cellon complains that he sometimes finds fruit injured by hard spots, but this does not seem by any means a universal complaint.

Solano is another variety upon

which there is great difference of opinion. Some find that it ripens too early with them (October) and complain that it is lacking in richness. Mr. Cellon finds nothing to complain of on that score, and his fruit holds well into December and January. All agree that it is a splendid grower, a handsome fruit, and that the seed is small and no fibre present.

Knight's Linda has fruited and produced some large specimens, weighing 36 ounces, of excellent quality, ripe in March. It is a good grower, like all of the introductions of Mr. Knight, and may prove very valuable after a few more years' test.

Rey has fruited this year, but the fruit was quite small.

Queen and Knight have not yet fruited, but promise fairly well, though not as sturdy and vigorous as some of the California introductions like Spinks and Grande. The latter has been fruited four or five years, but reports disagree as to time of ripening, though all seem to agree that it is a fine grower and a large fruit of fair quality. Season from October to January.

Spinks is a vigorous grower and promises to be prolific, but has not been under test long enough to establish either its season of maturity or productiveness. What fruit the writer has grown matured in November, but the first crops upon young grafts on old stocks often ripen prematurely. Size about 25 ounces, and quality good.

Nutmeg has shown a tendency to develop hard lumps inside the fruit like detached pieces of rind, which scatter through the fruit and ruin its value.

McDonald ripens in February and March, and is of fair quality and quite productive, though the size of the fruit on the same tree varies greatly—from 8 to 24 ounces in some instances.

Schmidt has shown itself a good grower and of good appearance, size and flavor. Some complain of the presence of fibre, while others do not deem it a valuable variety worthy of general planting. Season, March, and April.

Verde produces a good fruit of medium size and excellent appearance but distinctly pear-shaped, ripening

Continued on page 34.

Citrus Trees

Fertilization, spraying, and other necessary grove operations for spring season are fully covered in our book entitled "Fertilizers for the Spring Application" by Bayard F. Floyd. Do not fail to send for a copy if you have not received one.

Markets demand bright, unblemished fruit. The spring season is the time to insure such fruit by proper spraying. Do not delay, for after the fruit is once marked there is no remedy.

Ideal Fertilizers lead in Field Results.

Ideal Insecticides protect the crops from insect and disease pests.

Ideal Methods produce biggest Profits.

Wilson & Toomer Fertilizer Co.

Manufacturers of Ideal Fertilizers

Jacksonville, Fla.

Orange Boxes

"NONE BETTER—FEW AS GOOD"

Send us your inquiries.

RouxCrateCo. Inc

MANUFACTURERS

Main Office
Tampa, Fla.

Mill
Lake Garfield, Fla.

(Yearly Capacity, Two Million Boxes)

Profitable Returns from Grapes in 18 Months

If you plant an acreage to our Adapted Bunch Grapes you don't have to wait six or seven years before you get enough fruit from your planting to make your investment profitable; but, within eighteen months after planting your grapes you will receive a substantial paying yield of fruit which will sell at the highest prices on local and northern markets.

Florida-grown grapes ripen three to six weeks earlier than those of California, and have no competition in local and northern markets. Because the fruit is of the richest quality, Florida-grown Grapes bring the highest prices wherever offered for sale.

Grapes are dormant during the winter period, and there is no danger of injury to plants from frost.

Hundreds of acres are being planted to adapted bunch grapes in Florida every year, and this season the plantings will far exceed all former records. The reason is that for a decade and more these varieties of grapes have proven themselves adapted to Florida and have produced profitable results in fruit year after year. Each year the acreage planted has increased very materially.

This is the best time of the season to plant our grapes, and we have a nice supply of the standard varieties which are adapted to Florida soil and climatic conditions.

Don't permit anyone to fool you into planting foreign, northern or California grapes in Florida. They are not adapted to conditions in this state.

Send for our free catalogue, which gives full information on grape growing in Florida, also information regarding other fruits adapted to this state.

Plant an acreage of our adapted bunch grapes and be independent financially in a few years.

Adapted Nurseries

Dept. D.

Tampa, Fla.



SENATE

The experienced hostess likes to serve SENATE COFFEE. She always feels so confident that it will be *just right*. Try it in your own home. Truly it merits all the good things that coffee lovers are saying about it.

"NONE BETTER"

AT ALL GROCERS

Visit Our Exhibit at Orlando Sub-Tropical Fair

Tampa Coffee Mills, Manufacturers

Season's Grape Plantings Near One Thousand Acres

An authority on grape culture in the state says that the acreage planted to grapes in Florida this year will approach the thousand acre mark, the biggest season's planting thus far.

A decade ago, when the commercial introduction of the adapted bunch grapes was begun in the state, the common plantings were from one to a dozen vines, occasionally 50 to 100. There were a few early acreage plantings from one up to ten acres. A few years later, when the value of the introduced varieties was better recognized, the plantings of from 50 to 100 increased, and there were many more acreages put in, almost invariably an acre or two.

The results from these small acreages were so favorable that considerable impetus was given to grape growing. Bigger fruit men became interested and investigated and a few years later larger acreages were more common and there was much talk of still bigger plantings.

Within the past few years the interest in grape growing in Florida has developed very rapidly and impetus

was given to the interest by the formation of the Florida Grape Growers Association, which soon passed the 100 mark in membership and has held half a dozen successful conventions.

The interest in grape growing in Florida has developed as a direct result of the satisfactory returns from the plantings of the adapted varieties of grapes whose commercial introduction was begun about a decade ago.

It has been thoroughly demonstrated that Florida can and does grow a number of varieties of bunch grapes that have proven a success in this state and it has been further proven that a number of these varieties are of sufficient vitality and have the qualities which enable them to resist disease readily. They are long-lived varieties. Permanent vineyards have been proven a practical accomplishment in Florida. Ten consecutive seasons of healthy growth of grapes of the adapted varieties have thoroughly dissipated the fear that these varieties might not be long lived. Grapes that have gone through ten

seasons in this state continue to show the same healthful qualities that they did the first year planted. That is all that could be expected of grapes anywhere. No vineyard in the north that is neglected for several years will survive. That is just as true in California and elsewhere. But grapes will stand worse treatment in Florida than most other climates. That has been thoroughly demonstrated also.

One county in the state this season, it is said, will have a new acreage of above 300 acres. Another county, in which were planted more than two dozen acreages last year, will do even better this year and one single acreage may be as large as 100 acres.

The acreage planted to adapted bunch grapes in Florida this season will be limited by the quantity of suitable plants available, according to reliable authority. Greater impetus is being given to the development of bunch grape growing this year than ever before because it is being more and more appreciated that the industry is upon a firm basis.

CUSHMAN

Light weight engines, 3 and 4 HP

Used for

HARDIE SPRAYERS

JOHNSON DUSTERS

4 to 20 HP for

IRRIGATION AND ALL
POWER WORK

See our exhibit at Orlando Fair.

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Company**

Tampa, Florida.

Distributing agency for Dusters
and Sprayers.

PERFECTION TIRES

Same prices as of old, subject to advance
without notice.

FABRICS

Guaranteed 6'000 Miles

30x3	\$ 7.50
30x3 1/2	\$ 8.50
32x3 1/2	\$10.75
31x4	\$11.60
32x4	\$13.90
33x4	\$14.40
34x4	\$14.75
33x5	\$20.00

CORDS

Guaranteed 10,000 Miles

30x3 1/2	\$11.75
32x3 1/2	\$15.25
32x4	\$19.90
33x4	\$20.00
34x4	\$20.50
32x4 1/2	\$26.75
33x4 1/2	\$27.75
34x4 1/2	\$28.50
35x4 1/2	\$29.25
36x4 1/2	\$30.00
33x5	\$33.50
35x5	\$35.00

All Cords full oversize. All adjustments
made in our stores. Mail orders sent prepaid
when check accompanies order.

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THE WANURCO TANGERINE



Two Year Tree

The WANURCO Tangerine is a great improvement over any of the Kid Glove variety of oranges now produced. It surpasses all others in flavor, juice content and size. Its outside appearance is such that it cannot be imitated. It has a very delicious flavor and is superior in every way in eating quality to the Dancy. It has less rag and the fruit is very uniform in size.

WANURCO CHARACTERISTICS

The WANURCO is larger and better looking than any Tangerine we now have on the market and the fruit is a deep yellow when ripe. The juice is abundant and evenly distributed. It ripens earlier than the Dancy, and carries its juice longer into the summer. The skin is thin and very smooth and exceptionally easy to separate from the flesh.

THE TREE DESCRIBED

The WANURCO is an extremely hardy type of tree, the leaves of a dark glossy green and the foliage is dense. The leaves of the younger tree hold together as they do with the other varieties of Tangerines. It is a very attractive tree and exceptionally free from citrus diseases. The tree is a vigorous grower and prolific bearer.

OTHER VARIETIES CITRUS FRUITS

We conduct a general citrus nursery business, propagating trees of finest quality and paying special attention to root system and bud selection. If you want to plant trees that will make you a profit it will pay you to communicate with this old established and progressive nursery. Satisfied customers all over Florida attest the value of Wartmann trees. Write for price list.

The Wartmann Nursery Co.
Ocala, Florida

Prominent Horticulturist to Visit Australia

Mr. E. N. Reasoner, dean of Florida horticulturists, next month will embark for a trip to Australia, Tasmania and New Zealand, which promises to be productive of much interest to Florida growers.

At a special meeting of the executive committee of the Florida State Horticultural Society held in the Hillsboro Hotel in Tampa, February 6, Mr. Reasoner was appointed a special commissioner for the society, with imposing documents certifying to the fact, and asking aid of all authorities in his search for information.

Thus Mr. Reasoner officially will be traveling as a commissioner for the horticultural body, but this will be just as a matter of form. He is making the trip at his own expense, and for his own information. He will leave Florida about the first of March, making a number of stops on the way to the Pacific coast, embarking at San Francisco on March 27. He will go directly to Australia, making only a brief stop at Honolulu.

It is his expectation to spend five months or more in the Antipodes, staying until he has completed a number of investigations which are the purpose of his trip. He will arrive right at the beginning of the Australian citrus season, in the beginning of the autumn season there, and stay through the winter, which is at the time of our summer season.

In Australia he will be the guest of a friend, the former commissioner of agriculture of the Australian commonwealth, which will afford him many advantages in his investigations. He will be accompanied by a prominent apple nurseryman from Illinois, who will simultaneously pursue a number of investigations in connection with apple culture there.

Mr. Reasoner says the Australian government is now greatly concerned over the growth of Florida cactus in that country. In some manner Florida cactus was introduced into Australia some years ago, and has developed into a real menace there. Apparently this harmless Florida vegetation has found the Australian climate much to its liking, and it has thriven there to an extent that its eradication is becoming a matter of great importance to agricultural and horticultural interests. Mr. Reasoner, while tremendously interested, does not expect to be able, he says, to aid

them to any extent in this work.

This trip, of course, will necessitate Mr. Reasoner's absence from the April meeting in Orlando of the Florida State Horticultural Society, a fact which will be greatly regretted by the members of the organization, as he is regarded as one of the pillars of scientific horticulture in Florida. However, if he may be induced at the next year's meeting to tell of his Australian trip and the result of some of his investigations, the society's membership will feel compensated for his absence at this time.

SPRAY PEACHES WITH BORDEAUX FOR SCAB

Does your peach crop disappoint you every year? Have you noticed black scabs covering a third or a half of your peaches? This is peach scab—sometimes known as "freckles" or "brown scab"—and you should spray at once with bordeaux mixture in order to control it.

Experiments in spraying scab have been conducted on the horticultural grounds of the Florida Experiment Station. It was found that trees sprayed every month in the year had but little scab, as was also the case with trees sprayed up to and including march. The trees were sprayed every month during the year, but at each spraying one tree was left un-

sprayed. In this way it was shown that the most effective spraying could be done during March and April. Through the dormant, winter season bordeaux mixture, strength 5-5-50, was used. In spring and summer a weaker solution was used, 3-3-50. The stronger solution is not used in the warmer months because of the injury to the foliage. This spray will also help to keep brown rot in control.

The characteristic growth of scab on fruit is at first a small round olive-brown spot about an eighth of an inch in diameter. Later the spots turn black and spread out till they run together and form one big scab, covering a third or a half of the entire peach. The side of the peach that is attacked is dwarfed and often cracks. The flesh immediately beneath the epidermis is green and bitter while the other part of the fruit is ripe and sweet. The fungus which causes this scab may also attack the twigs, causing brown glazed spots, says Dr. O. F. Burger, plant pathologist of the Florida Experiment Station.

H. Harold Hume, Wm. P. Simmons,
President Vice-President
D. A. Morrison, Jr., Secty. & Treas.
BEST FERTILIZERS, INSECTICIDES,
SPRAYERS, POULTRY SUPPLIES
Honest Goods, Fair Prices, Prompt Ship-
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E. O. PAINTER FERTILIZER CO.
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For Every Power Job On the Small Farm

There's a world of power in this sturdy, compact small-farm tractor. It puts through every power job on the farm—plowing, harrowing, seeding, cultivating, belt jobs—with perfect ease and at a cost of but 8c to 10c per hour. **Plows 7 inches deep in clay sod.**

CENTAUR SMALL FARM TRACTOR

The Centaur will displace the horse on the small farm and quickly pay for itself in the time, labor and horse feed it saves. It has features that place it **far above any other tractor of its size.**

"New-Way" Air-Cooled Motor—
Agents and Dealers: Write

The Central Tractor Company
21 Central Ave. Greenwich, Ohio 100

Automatic Governor—Bosch Ignition—Hyatt Roller Bearings. Has Reverse—backs on its own power. Centaur economy and reliability absolutely proven by three years successful performance. Liberal terms. Write today for special proposition.

"I don't know of any job it won't do, except eat its head off."
W. R. Hollis, N. Y.
"Am delighted with its performance. Does a plowing job far better than a horse, also better disk."
L. B. Boston, Co. Ag. Agent, Mass.
"There's not another tractor of its size that compares in any way with Centaur."
Harry J. Marx, Ohio



The TIRRELL Sprayer

will be demonstrated at the Orlando Fair, Feb. 13-17. See this wonderful Sprayer work.

Cut the cost of your spraying in half.

Citrus Growers Supply Co.
Tampa, Fla.

The First

You would not want your first-grade fruit shipped in plain boxes. Chase & Co. were the first in Florida to use boxes with side prints featuring Florida Oranges and Grapefruit. Yes, the printing was in red.

Chase & Co. were the first to introduce into Florida the stripping of loads to prevent shifting en route.

Chase & Co. were the first to introduce and sell Florida Grapefruit (as well as Celery and many other Florida products) in practically every Western market now using Florida Grapefruit.

Just three items. There are many more.

**LEADERS FOR NEARLY
FORTY YEARS**

Chase & Co.

Marketing Agent for Growers
and Associations of Growers
Main Office: Jacksonville, Fla.

Plant Avocados for Quick and Sure Returns

No safer investment is open to Florida growers than the planting of avocado groves. With returns of from \$100 to \$300 per tree per year from groves in full bearing; with earnings of from \$1,500 per acre up on five-year-old groves, no line of activity offers greater or more certain returns to the enterprising planter. Budded trees come into bearing at the early age of two years, and by the time they are five years old, frequently pay their owners a profit much greater than a full bearing orange grove. The hardy Mexican and hybrid types are as vigorous and frost-resistant as the hardiest citrus trees.

We have a complete stock of all the hardy varieties now ready for planting. Ask for our catalogue and details as to planting and care of avocado trees.

The Pioneers Will Reap the Richest Returns—Be a Pioneer

OUR CITRUS NURSERY STOCK IS COMPLETE IN EVERY LINE

We have a complete line of citrus trees in all sizes on both rough lemon and sour orange stock, but orders are being booked rapidly, and to insure delivery of exact size desired, your order should be placed at once, before certain sizes are exhausted.

In oranges we have Parson Brown, Pineapple, Lue Gim Gong, Valencia and Tardiff. In grapefruit, the Walters and Marsh Seedless; and in tangerines the Dancy and King.

These trees are as fine as were ever grown or offered for sale in Florida. They are strong and vigorous, free from blemish, carry the Thomas guarantee, which has made the product of this nursery a standard for Florida grove planters.

THE THOMAS GUARANTEE STANDS BACK OF EVERY THOMAS TREE

The C. E. Thomas Nurseries

404 1-2 Zaok Street

Tampa, Florida

CITRUS CULTURE IN SPAIN

Continued from page 9.
gation during the dry months is essential to the growth of the orange trees. In the Levante region, irrigation begins early in the spring and lasts into the autumn. Water is applied in this way to the groves during the summer every 8 to 10 days where the soil is sandy, otherwise every 18 to 20 days. During the spring and autumn irrigation is restricted to every 28 to 30 days. The water consumption varies from 150 to 600 cubic meters per hectare. Water, in this district, is taken from various rivers and streams and also from wells.

PRUNING. The trees are pruned at least once every two years. They are kept well cut back and not allowed to grow as large as those in other countries. They are universally hemispherical in shape and the inside of this hemisphere is kept as bare as possible.

PESTS, ETC. In their order of importance, the pests affecting the orange orchards in this district are as follows:

Mytilaspis citricola.

Packard (purple scale) sometimes called "La Serpeta."

Chrysomphalud dictiospermi.

Mask.

Dactylopius citri.

THE CITRUS INDUSTRY

Risso (mealy bug).

Lecanium olae.

Bernard (black scale)

Meliola camelliae.

Catt.

It is extremely difficult to obtain exact statistics concerning the damage and loss caused by these pests. It is estimated, however, that the orange crop suffers to the extent of from ten to thirty per cent, depending on the district.

INSECTICIDES USED. Hydrocyanic acid gas as used in California is used extensively here. The liquid insecticide found most efficacious by the local orchardists consists of:

Resina de Pino (pine rosin) 1.600 kilos

Carbonate de sosa (carbonate of soda) .880 kilos

Cloruro potasico (chloride of potassium) .070 kilos

Olivarda (*Inula viscosa*) 5 or 6 shoots.

Agua (water) 100 liters.

The shoots are boiled in 25 liters of water, the carbonate of soda and chloride of potassium are added and as soon as dissolved, the pine rosin. When the mixture is completed, 75 liters of water are added.

PICKING AND PACKING. From its fifth to its sixth year an orange tree begins to bear fruit in considera-

ble quantities, but not until its tenth or twelfth year does it bear fully. In this district picking begins early in November and lasts until April. An insignificant crop of oranges called "Renaviva" is gathered here in the summer, a sort of second-wind crop which, if cultivated and encouraged as in Sicily, would result in appreciable quantities.

Lemon trees, although in flower the year round, bear their greatest crops in November, April and May.

Picking is done on clear days when there is no dew. The fruit is carried in baskets to packing houses, sorted, graded, wrapped in paper by hand and packed in cases containing two compartments. There are two sizes packed; about 40 per cent of the crop goes 714 to the case and about 60 per cent pack 420 to the case of 165 pounds, or a little more than twice the weight of the American cases. Oranges not intended for export but for local consumption are not crated, but shipped in bulk.

GENERAL. Oranges are sold here by the arroba (27.5 pounds) or by the 1,000 by sight or estimate.

Orange lands are valuable, and sell from \$700 to \$1,000 per acre.

Average yield per acre, 20,000 lbs.

Average yield per tree, 9 to 10 arrobas (about 275 pounds).

"Glen Trees Grow"

**When you think of planting,
call on us. We can help you
a great deal. For delivery
this season we have a fine,
complete stock of all varie-
ties of citrus.**

1922-23 Catalogue Now Ready

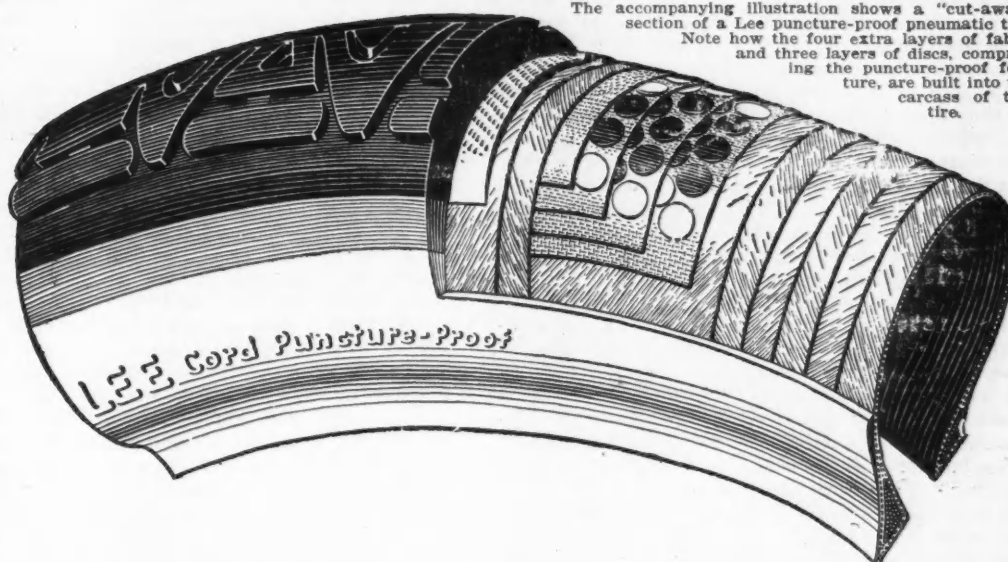
Glen Saint Mary Nurseries Company
Winter Haven, Florida

Consider "Tire Insurance" as well as "Frost Insurance"

Use LEE Cord Puncture-Proof Tires

The Exclusive Lee Puncture-Proof Feature

The accompanying illustration shows a "cut-away" section of a Lee puncture-proof pneumatic tire. Note how the four extra layers of fabric and three layers of discs, comprising the puncture-proof feature, are built into the carcass of this tire.



The Steel Disc Shield prevents PUNCTURES, also protects the inner carcass of the tire from STONE BRUISE, which makes LEE PUNCTURE-PROOF give the full UNINTERRUPTED MILEAGE built into them. 75 per cent of regular Fabric or Cord Tires do not give the service that is built into them, because of Punctures and Stone Bruises, that invariably cause blow-outs.

For Sale by the Following Dealers:

Lee Tire Co., Jacksonville
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Bailey's Service Station, Lakeland
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City Filling Station, Orlando
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Eastwood Tire Shop, Sebring
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Franklin Hdw. Co., Ft. Myers
Island City Garage, Fernandina
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Yanco Filling Station, West Palm Beach

If there is no dealer in your town, write us

LEE TIRE COMPANY OF FLORIDA, INC.

Jacksonville

Tampa

Thirty

TWO COMBINED SPRAYS BETTER THAN WHEN USED ALONE

Growers of citrus today may use a combination spray for two of their most serious enemies, a spray which has proved effective and advantageous in many ways.

This is bordeaux-oil emulsion. It is made by combining regular bordeaux mixture and an oil emulsion. The bordeaux controls the diseases known as scab and melanose, and the oil controls scale insects. Specialists of the Florida Experiment Station and the State Plant Board of Florida declare that it is much better than the two used separately.

They say that the main advantages are (1) it spreads more evenly, (2) remains in suspension longer, (3) adheres to the sprayed foliage better, (4) is less injurious to tender foliage than oil emulsion alone, (5) the oil does not separate from the emulsion in hard water as with some of the oil emulsions, (6) the combined spray does not attack the metal parts of the sprayer as bordeaux alone does.

Bordeaux-oil emulsion may be made at home easily and cheaply, and for this purpose the following directions are offered by O. F. Burger and F. M. O'Byrne, of the above mentioned institutions.

"Dissolve bluestone in a barrel at

THE CITRUS INDUSTRY

the rate of 1 pound to 1 gallon of water. To do this, tie the bluestone in a cloth sack and suspend near the surface of the water.

"Slake the best grade of rock lime obtainable in just the right amount of water to slake it thoroly, adding more water until the total amount used equals in gallons the number of pounds of lime used.

"In mixing bordeaux, remember to never mix the concentrated solutions together; this ruins the bordeaux.

"To mix 50 gallons of bordeaux of the 3-3-50 formula: Put 22 gallons of water in the sprayer, stir the lime-stone solution thoroly and add 3 gallons of it to the water in the sprayer, straining it carefully as it is added. Next put 22 gallons of water in a barrel and add to it 3 gallons of the bluestone solution very slowly into the diluted lime solution, stirring or otherwise agitating it violently while the mixture is being made. While the mixture is still being stirred, add very slowly 3 quarts of oil emulsion. The combined solution is 'bordeaux-oil emulsion'."

The two very important uses of bordeaux-oil emulsion, at present, are to control citrus scab and melanose on fruit. To control scab, apply bordeaux-oil emulsion before the spring growth begins. The time to spray for

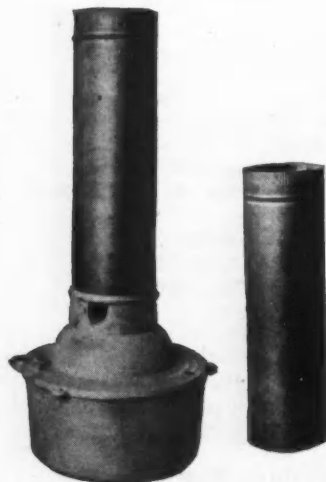
melanose is from ten to twenty days after the bloom petals have dropped.

TELLS OF WAR GAS AS AN INSECTICIDE

How the gases which came into use so prominently in war time are being developed and put to practical purposes in peace time was the theme of an address by Brigadier General Amos A. Fries, of the War Department, at the mid-winter convention of the Insecticide and Disinfectant Manufacturers' Association, at the Hotel Astor in New York City.

General Fries, who is head of the Chemical Warfare Division, spoke of the different gases used during the war, explaining their composition and pointing out how and where they were successful or failed to achieve results. Then, turning to the problem of agriculture in dealing with the various kinds of insects which ravage crops, he discussed the gaseous combinations which may prove useful in fighting the pests. Gas, he declared, is probably the only way of dealing with the boll weevil, but the best gas to use and the proper method of applying it are still in the experimental stage. Gen. Fries said that his department is working very closely with the Department of Agriculture upon these problems.

Year After Year of Heater Protection Without Replacement Cost



Expense of replacements on heaters is a serious consideration and this feature alone deserves a very careful investigation on the part of the purchaser.

We invite comparison of replacement expense of the OLDSMAR FROST PROTECTOR with that of other heaters.

FIRST COST IS LAST COST

When you purchase OLDSMAR FROST PROTECTORS there is no replacement expense.

We give you a written guarantee that there will be no replacements necessary on the OLDSMAR FROST PROTECTOR for a period of ten years.

By the use of a burner which is our patent, we are able to create more intense heat and greater radiation than is possible with other heaters. No other heater is constructed on this principle. Complete control of the heat is possible with OLDSMAR FROST PROTECTORS.

40 Per Cent Greater Efficiency than Any Other Heater

Write for descriptive literature, prices and valuable data on Florida freezes and frost protection.

A FLORIDA PRODUCT FOR PROTECTION OF FLORIDA GROVES

KELLER HEATING COMPANY

105 West Whiting St.

TAMPA, FLORIDA

Factory at Oldsmar, Fla.

DOES IT PAY

To experiment with inferior feeds
when the very best is so easily available

Red Comb Scratch and Mash Feeds

Will do for you what they have
accomplished for others

Read what other Florida Poultry Owners
have found out concerning them



Groveland, Fla., Nov. 30th, 1922.
To Whom It May Concern:

This is to certify in the year 1921 I fed Red Comb Egg Mash, whenever obtainable, to two Ancona hens. This Egg Mash is the best I have used so far, because the above mentioned Ancona hens soared up in the amazing record of 339 and 335 eggs respectively in 365 days, topping the world's record in egg laying. I recommend it to every one who wants results from his chickens.

N. PEARSON.

FERRIS LEGHORNS THE WORLD'S LARGEST LEGHORN FARMS

West Palm Beach, Fla., May 18th, 1922.

Jackson Grain Company,
Jacksonville, Florida.

Gentlemen:—

This is to certify that the Red Comb feeds are used exclusively on the Ferris Southern White Leghorn Farms.

We have had excellent results starting and rearing chicks, the loss not exceeding over 5 per cent.

As we are position to observe closely feeding results from start to maturity, we know that your buttermilk chick mash is most desirable for use in starting chicks as well as being the best at any stage of development.

It is also well known that a mash containing dried buttermilk is superior for egg production, as well as being beneficial for the health of the flock.

We have at all times found the Red Comb feeds clean and free from foreign substances and adulteration, and made from choice whole grains; therefore we can unequivocally and heartily recommend them.

Yours very truly,

(sgd) J. S. STEVER,
Manager Southern Leghorn Farm,
West Palm Beach, Fla.



Clearwater, Fla., July 24th, 1922.

Mr. I. E. Nicholson,
Clearwater, Fla.

Dear Sir:—

Replying to your inquiry of the 20th instant, I take pleasure in stating that Red Comb Buttermilk Mash is the most economical poultry food I ever used. In fact, I think I can go a step farther and say that judging from increased egg production the five bags I bought from you have not cost me one cent.

Sincerely yours,
(sgd)

W. W. WALLING.

For sale by Feed Dealers Everywhere

Jackson Grain Co.,

State Distributors

TAMPA, FLORIDA

Dunn Grove Heaters Well Suited for Florida Climate

The recent visit of Chas. Paeschke, Jr., to the citrus groves of Florida brings out many features of this field as it relates to grove heating equipment, that will be of real interest to grove owners.

Mr. Paeschke is general sales manager of the Geuder, Paeschke & Frey Co., manufacturers of the Dunn Grove Heater. For nearly ten years this heater has enjoyed a wide sale and increasing popularity among citrus growers in California.

Due to the success of the Dunn Grove Heater in California, he felt it his duty to personally investigate the Florida field, to learn first hand just how their heater might be expected to perform in this territory. This was done before inviting The Imperial Oil Company, Tampa, to act as general agents for the Dunn Grove Heater in this state.

After spending over a month at various citrus centers, such as Tampa, Orlando, DeLand, Miami, Sarasota, etc., after many automobile tours and after numerous interviews with grove owners, it was not a difficult

matter to see how the Dunn Grove Heater is destined to as large if not greater distribution than in the California groves.

Mr. Paeschke's first observation strengthened his belief that Florida needs this protection, for while freezes are not a yearly occurrence, they are most drastic when they do hit this state.

Another feature brought out by his visit was that both the banks and the newspapers are recognizing the prime importance to the state of the insurance features of grove protection through the use of satisfactory heaters. A general freeze, unless there is adequate protection, would leave a terrible imprint on prosperity in Florida for some years to come.

While many groves are equipped, it is the opinion of Mr. Paeschke that owners here are more prone to "take a chance"—or to trust to Providence to withhold low temperatures, a condition which, of course, can never be attained—except by the use of standard grove heaters.

It was also found that climatologic-

al reports and the topography of Florida clearly indicate the necessity for preparedness on the part of grove owners in many counties.

During this visit, Mr. Paeschke conducted many personal demonstrations with the Dunn Grove Heater, to determine its comparative efficiency under the particular climatic conditions of Florida, all of which showed that the Dunn Heater—so far as construction is concerned—can be depended upon to render just as satisfactory service to Florida grove owners as it has for many years to the citrus growers of California.

Before leaving Tampa, Mr. Paeschke completed arrangements with The Imperial Oil Co. to act as general agents for this state—and who at the present writing report excellent progress.

There is no denying that the quickest way to have trained men and women managing our farms and gracing our farm homes is to start with and train the boys and girls of the country districts.

Quality & Service

If you buy your Furniture from TARR'S you are assured of Quality merchandise. Our service extends all over South Florida. If we cannot reach you by truck, we ship all goods prepaid, and besides this we maintain an interior decorating department where information as to the correct furniture, floor coverings and draperies to be used is given without charge.

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Dunn Grove Heaters in Action in a California Grove. Note the Old Model Stack; These Heaters Have Been in Use for Several Years.

Over 650,000 Dunn Grove Heaters are now in use in California, owned by experienced growers who demand the best.

The Dunn is a heater of proven worth. It is the result of many years careful research and study in heating. Has been thoroughly tested under actual frost conditions. The exclusive patented features of the Dunn make it the most efficient, economical and durable grove heater known.

Lights quickly and stays lit—has permanent asbestos lighting wick. Perfect combustion, all heat and no smoke. Burns clean, uses less oil. 9½ gallon heater burns with maximum efficiency 20 hours without refilling.

Improved stack has perforations depressed to inside. Radiates heat to side and ground. Collapsible stack makes moving and storing easier. Made of 24-gauge extra heavy Keystone copper bearing steel. Seamless bowl and cover.

Try a Dunn Grove Heater at Our Expense

We will gladly send any responsible grove owner a Dunn Grove Heater, express prepaid, upon request. Try this heater out in your own grove. Find out for yourself what it will do.

Test it with thermometers, or in any other manner. See how quickly and easily it is lighted; how rapidly it generates heat; how long it burns without refilling.

Immediate service—a large stock of Dunn Grove Heaters always on hand in our Tampa warehouse insure you against delay.

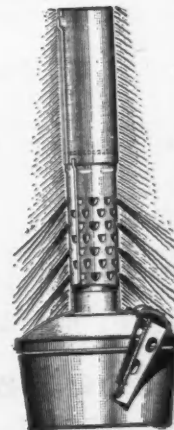
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See Dunn Grove Heater Exhibit at Orlando Fair

Thirty-four

**GAUTEMALAN AND
MEXICAN AVOCADOS
FRUITING IN FLORIDA**

Continued from page 22.

in January and February Tree a good grower.

Perfecto is a splendid, upright, free grower and good producer in some localities. The shape is against it, being elongated pear shape, but the quality is fair; weight about 20 oz; ripens in November and December. My own experience with Perfecto has been unfortunate, as 4-year-old grafts 15 to 20 feet high have so far failed to hold fruit.

Taft has given quite general satisfaction, though in some places it does not seem to do as well as in others. On the whole it may be classed as a good reliable tree to plant for February market, the fruit being of superior quality and medium size. It does not show any precocity, usually taking a year longer to commence bearing than the average, but this is not by any means a bad fault, and promises a longer bearing period with better crops due to larger bearing surface.

Collins, Cella and Winslow are seedlings grown at the Miami Experiment Station, and are wonderfully thrifty growers as well as heavy yielders. The size of the first two

THE CITRUS INDUSTRY

preclude their ever becoming commercial successes. Winslow, while small (10 to 15 ounces), is large enough to find a ready sale, one-half of a fruit making enough to serve as a single portion. It is a regular and free bearer, though the latest we have, being marketable in March but not attaining its full richness till April, and seldom beginning to drop before May. It has been held on the tree into August, but April is its best season. Green rind, yellow meat and nearly round in shape, slightly one-sided, but hardly enough to notice.

There is a seedling from this which has not as yet been named, that was line-grafted onto an old stump by Prof. P. H. Relfs at his place at Buena Vista, so that in two years it fruited. The fruit ripened last November and in shape was an exact reproduction of the parent but nearly three times as large. The rind was smooth, like the West Indian type, and this, taken with the season of maturity and large size, makes it seem probable that it is a natural hybrid, as the parent tree was surrounded by West Indian type trees all in bloom when it was set.

Mexican stock does not thrive in South Florida sand, and most of the trees brought in from California being on this root, have failed to suc-

ceed. On West Indian stock they do very well and in the middle and northern parts of the state, where there is a clay sub-soil, seedlings of this type seem very much at home.

Of the California introductions, Harman produces a small fruit, with a glossy greenish-purple surface and loose seed. The cream-yellow flesh is of fine buttery quality and rich flavor. It is a good grower and a heavy bearer, ripening in July and August.

San Sebastian on West Indian roots is a tremendous grower and ripens its fruit in June and July when good fruit is scarce. It is a good bearer of excellent quality; though averaging small (10 to 11 oz., sometimes 13) it is well worthy of extensive planting, particularly in the colder sections.

Gottfried is a seedling of Mexican type that was grown from a seed sent from South America. The original tree is enormous, and the fruit is the largest of the Mexican type that we know of. It averages about a pound, and runs up to 20 ounces. Pear-shaped, purple-black, seed inclined to be loose, and skin peeling readily. In quality it is excellent, free from fibre or essential oil flavor, rich and smooth, yellow meat; season August.

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